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LONDON, SATURDAY, AUGUST 17, 1878.

[SUPPLEMENT.] PRICE SIXPENCE.

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Aberdaunant	Buyers. Sellers.
Argentine 58 68.	
	New Zealand Kapanga 1% 1%
Col £ 114 £ 1	36 North Laxey 28 28.6d.
	Parys Mountain 78 88.
	Pateley Bridge 41/4 5
	1 Penstruthal
	16 Richmond 756 776
Don Padas Consols 2 2	14 Roman Gravels 71/2 8
Don Pedro	d. Rookhope 15s 17s. 6d
Eberhardt	14 South Condurrow 11 1114
Bast Caradon 58 68.	
	½ Tyn-y-Fron 114 114
Frontino 9s 11s.	
Frontino 9s 11s.	
Ol- 10s 12s. 6	
Glyn 10s 12s. 6	
Glenroy 10s. 12s. 6 Glyn. 10s. 11s. 6 Gorsedd and Merllyn. 354 4	
Grogwinian attribut 3% 4	West Godolphin (call pd)12s.6d, 15s.
Great L. 2	14 West Seton 6 8
Great Laxey 18% 19	West Wye Valley 2 21/2
Huitafall 18% 19	% W. Grenville 134 2
Lest Chance	Wye Valley 1% 1%
Kellapear 34 3	
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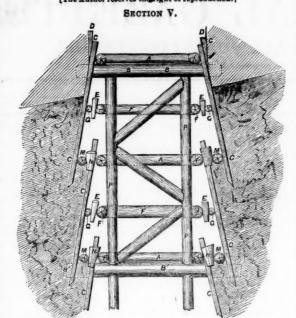
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Lectures on Bractical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES.* - No. LXXXIII. BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.

Mining Engineer, Wakefield. (Formerly Student at the Royal Bergakademie, Clausthal). ves the right of reproduction.]



a, first spilling frame; b, bearing crib; c, piles; d, wedges; e, auxiliary crib wedges; f, auxiliary crib; g, back support.

SHAFT SPILLING.—The object of this method of the stand without support. According stratum so loose that it will not stand without support. According to the nature of the stratum, it may be sufficient that the lining follows immediately the excavation, whilst in other cases it may be even necessary that the lining should precede the work of excavation. In the latter case, where it is also intended to tub back the water met with, the method of spilling has often been replaced by that of sinking the tubbing simultaneously with, or even slightly in edgence of the experience. n advance of, the excavation.

As perhaps the simplest modification of the ordinary method of spilling may be considered the arrangement generally called "Dutch Framing," which is used chiefly in passing through alluvium, or other Framing," which is used chiefly in passing through alluvium, or other loose or quick strata, surface deposits, stream works, &c. This kind of timbering is generally commenced as follows: —The surface frame (or first rectangular crib) is formed of four pieces of 3 in. to 6 in. square beams, slightly notched into each other where they cross (at the corners), but are prolonged a considerable distance, so as to obtain sufficient bearing surface on the top. Behind these, planks are driven down into the loose ground in a slightly diverging direction. The loose ground is excavated between these piles, the latter being again driven somewhat further into the ground in prolatter being again driven somewhat further into the ground in proportion as the removal of the ground facilitates any further advance. When the planks have been driven down to nearly their vance. When the planks have been driven down to nearly their full length the next crib is placed in position. This crib consists simply of four square beams, the ends of which have been notched to half their depth. Betseen this crib and the planks or piles a second set of piles is driven into the ground at the same inclination as the last. As the ground is removed the pressure of the loose ground behind the planks will force them tight against the frame or crib. The first set of piles are driven down to their full length, and the second set as the ground is excavated. In like manner when this second set of piles has been driven down to nearly the full length, the next bearing crib is likewise introduced, and between it and the last set of piles the next set is introduced. The divergence which is given to the piles should be such that the crib can be readily placed in position, and the next set of piles inserted—so that when the ground is still farther excavated the pressure of the loose ground behind the piles will force and hold them tight against the crib. Of course, all the cribs will be of the same size, and it may be found advisable to connect two successive cribs by

against the crib. Of course, all the cribs will be of the same size, and it may be found advisable to connect two successive cribs by stringing laths, two in each corner.

The general principle followed in the spilling of shafts is exactly the same as that in the spilling of levels. The work consists in the repetition of an arrangement of timbering, such that the end of one set forms the suitable commencement for the next, or, more exactly the secence divisions are in the forms of truested arrangement.

of one set forms the suitable commencement for the next, or, more exactly, the separate divisions are in the form of truncated pyramids, the narrow end of one fitting into the wide end of the next. As will be evident from the very nature of the ground to be passed through the fixing of bearing cribsat intervals, as we have discussed in the previous chapters, is out of the question, or, at least, such bearing cribs can only be considered as of a temporary nature; the timbering must in the meanwhile (until the quick strata has been passed through, and solid ground is reached, on which a permanent bearing crib can be laid) be supported either by being suspended from bearing cribs in the solid compact ground above or from beams laid across the surface. If a thin layer of soft alluvium forms the surface this will be first sunk through, and the beams laid upon the more solid ground. The beams are laid across the shaft, close to the shorter sides, and extend some distance beyond the shaft in the solid ground, so as to obtain a greater bearing surface. Whether the weights of the timber to be supported is very considerable there the shorter sides, and extend some distance beyond the shaft in the solid ground, so as to obtain a greater bearing surface. Where the weights of the timber to be supported is very considerable there will be four beams—two at each side, laid close upon each other. The projecting ends of the beams are weighted or bedded fast by covering them with earth or filling up the excavation made for their insertion. Where the shaft is of considerable length, and is divided into compartments, an additional beam or beams may be inserted in the line of partitions. Where the shaft is more nearly square or polygonal in section "Rustbaume" are laid also along the longer sides of the shaft. This is especially advisable where it is intended that the beams shall also bear the weight of machinery—pumping engines. &c. Where it is intended to bank up the nit hill pumping engines, &c. Where it is intended to bank up the pit hill the "Rustbaume" will be secured more rigidly by first stamping well the ground on which the beams are laid, and also the first few tubsful of earth, which are then tipped on the beams, the rest of the debris from the excavation being tipped loosely over the ground (and also the beams) in the immediate neighbourhood of the shaft, which with time will settle and become more solid, giving the beam cure and immoveable position.

The object of the bearing, here called Rustbaume, is to give a secure foundation to the complete frame or bearing crib; in this case the first so-called Ansteck-geviere. This bearing crib, being that from which the shaft is from time to time tested as to its per that from which the shaft is from time to time tested as to its perpendicularity, must be fixed in as secure and immoveable a manner as possible, by being wedged tightly against the sides of the shaft. When the pit-hill is to be raised or banked up considerably above the level of the surrounding ground the space above the Ansteck-geviere to the top of the pit-bank will be built up in properib timbering, backed or lagged with lining planks, around which the debris is tightly packed and stowed as it is raised and tipped from the pit.

Where the ground is so loose that the insertion in it of bearing

beams or cribs for the Ansteck-geviere of the succeeding sets in the spilling is impossible the frames of the spilling must be supported either directly or indirectly from the uppermost (i.e., first) of the Ansteck-geviere or spilling-frames. This is effected by suspending them with [shaped iron clamps driven into the frames, or by means of chains, ropes, or laths. If the length of spilling is considerable the successive frames will be suspended from the next above. When solid ground is reached a permanent bearing crib is securely and accurately fixed in position, and the last of the spilling-frames is supported from this by inserting props between them. The next spilling-frame is supported from this last by means of props (cut to suit), which are driven up tight between the two frames. The iron clamp (or otherwise) by means of which this last frame is supported is withdrawn, so as to let somewhat of the weight come upon the props. In this manner props are inserted between the various frames, the clamps, &c., being withdrawn as the timber is gradually supported from the lowest permanent bearing crib by the insertion of the props. The last set of props, which serve to connect the spilling with the prop-crib timbering above, are driven in as tightly as possible.

When the first of the spilling frames has been properly laid upon

insertion of the props. The last set of props, which serve to connect the spilling with the prop-crib timbering above, are driven in as tightly as possible.

When the first of the spilling-frames has been properly laid upon the bearing-crib and wedged tight the insertion of the piles begins. The shape and dimensions of the piles are pretty much the same as we have noticed in the case of spilling for levels. They must be somewhat longer than the distance between the commencing cribs of two adjoining sets. Supposing the sets or fields to be from 3 ft. to 5 ft. in length (which is the usual size) the piles will be from 5 ft. to 6 ft. 6 in in length. The foremost ends of the flat piles are usually sharpened either on both sides or only on one side, the most general practice being to sharpen them on the inside. This gives them a tendency when driven down to diverge outward towards the bottom, and thus to counteract the tendency of the pressure of the loose ground behind the piles to push the piles inwards. Where the piles are made of round wood the small end will be sharpened all round, so as to enable the pile more readily to penetrate the ground. Since the piles receive an outwards diverging direction as they are driven down into the ground it will be evident that if of the same breadth or thickness throughout, even when the piles are close together at the upper end, there will be considerable openings at the lower end, through which the loose earth will find its way. In order to avoid this it is usual to make some of the piles next the corners broader at the bottom than at the top.

The piles are driven in behind the Ansteck-geviere and between it and the solid rock, commencing on each side at the corners and proceeding towards the middle of the side. In proportion as the piles are driven downwards the ground thus separated or enclosed is filled out, but never so far as to lay bare the foot of the piles. Indeed, the ground should first be removed when it becomes necessary to do so in order to facilitate the drivi

two operations, so to speak, taking place simultaneously. In order to give the piles the necessary divergence it is often usual to insert wedges between them and the solid rock. Where the length of a wedges between them and the solid rock. Where the length of a set is considerable, and the pressure behind the piles great, so that there is some liability of the piles being bent and broken, an "auxiliary" crib is inserted between the main cribs of two adjoining sets, exactly analogous to the auxiliary door-set in the case of spilling in levels. As the object of this auxiliary crib is to afford a firm support for the piles against the pressure of the ground it is evident that the outside of the auxiliary crib must be in close contact with the piles, and hence that the outside dimensions of the auxiliary the piles, and hence that the outside dimensions of the auxiliary crib must be larger than those of the main cribs. The outer surface of the auxiliary crib also, where the timber is placed, should have the same inclination as the piles, to which they act as a sort of guide. In some cases the actual inside dimensions and the thickness of the auxiliary cribs remain the same as those of the main cribs, thus leaving the auxiliary cribs the stronger of the two. In other cases the inside dimensions of the auxiliary cribs are larger, and the thickness less than those of the main cribs, the latter being the stronger. In many cases it is desirable, and often convenient

other cases the inside dimensions of the auxiliary cribs are larger, and the thickness less than those of the main cribs, the latter being the stronger. In many cases it is desirable, and often convenient to have the auxiliary crib of exactly the same dimensions as the main cribs; and in order to preserve the proper inclination of the piles, and to ensure them a sufficient support, the space between the auxiliary crib and the piles which would otherwise be left open is either completely filled by a third weak frame or crib, or by frame whose outer dimensions correspond to the section of the shaft along the inside of the piles at the place; this frame, called the back support or sill, is kept tightly strained against the piles by means of wedges driven in between it and the auxiliary crib.

When the auxiliary crib has been properly fixed in position, it must be secured either by means of long [clamp irons driven into it and the main crib above; since the driving down of the piles has a tendency to bring the auxiliary crib down with it. The auxiliary crib is often still further supported, though only in a temporary manner, by props driven beneath it, and on the floor of the shaft. Sickel suggests the following method of supporting the auxiliary crib during the driving down of the piles. Two or three of the piles on each side are driven down considerably in advance of the rest, and a short [shaped iron clamp has one end driven into the auxiliary crib, and the other end into the pile either above or below. When the remainder of the pile has been driven down to the same extent, other two or three are likewise driven down in advance, and the clamps are taken from the first piles, and the auxiliary crib is green surported, by driving the clamps into the same extent, other two or three are likewise driven down advance, and the clamps are taken from the first piles, and the auxiliary crib is green surported, by driving the clamps into the same when the remainder of the pile has been driven down to the same extent, other two or three are likewise driven down in advance, and the clamps are taken from the first piles, and the auxiliary crib is again supported by driving the clamps into 'i is second set of advanced piles. To constantly advance the same piles before the rest, and to repeatedly drive the iron clamps into the same piles, would most likely lead to a splitting of the piles. When the auxiliary crib has thus been made secure, the driving in of the piles recommences, and is continued with the intermittent or simultaneous excavation of the ground until the piles have been driven so far down that the heads of the piles project only 3 in. or 4 in. above the first main cribs. Should the advance of the piles proceed too slowly even after the attempt has been made to facilitate their advance by working at the foot with a long crow or pricker bar, the wedges between the sill and the auxiliary cribs are slightly loosened so as to ease the piles. This constitutes a great advantage in having a sill behind the auxiliary crib, driven up with against the piles with wedges.

EXPLOSIONS ON COAL SHIPS.—An enquiry has been held by Mr. H. C. Rothery, Wreck Commissioner and Inspector, into the circumstances attending an explosion which occurred on board the steamship Caduceus, of London. The Caduceus, which belongs to Mr. John Hall, of Newcastle-on-Tyne, arrived at Cardiff on June 24, and the same afternoon began to take in a cargo of coals for Aden. By the rearring of the 28th she held taken on heard shout 2180 tons the morning of the 28th she had taken on board about 2180 tons coal, and shortly afterwards an explosion occurred in the hold. or coal, and shortly afterwards an explosion occurred in the hold. In his report to the Board of Trade Mr. Rothery says:—"There can, I think, be no question as to what caused the explosion in this case. Four hundred tons of freshly wrought coal are put into the lower forehold, and there allowed to remain closed up for about 28 hours; at the end of that time the foreman coal trimmer opens a way at the end of that time the foreman coal trimmer opens a way through the closely sealed hatch into the empty space above the coal, where the gas would naturally have accumulated, there being no means afforded for its escape. A light is struck, the gas catches fire, and an explosion necessarily takes place. There could be no other result, and the only wonder is that those who were employed in the work should not have anticipated it. Had there been, at there should have been, a ventilator in the fore part of the lower hold passing through, as it might easily have done, the seamen's and firemen's berths, and up through the deck above, and likewise another ventilator at the other end, with the coals properly adjusted, there can be little doubt that this accident would likewise another ventilator at the other end, with the coals properly adjusted, there can be little doubt that this accident would never have occurred. The gas, which is so much lighter than the air, would have found its way naturally through the ventilator and escaped. I cannot but think that this enquiry may be of some use if it results in showing to such gentlemen as Mr. Lowrie and others, who have been for so many years engaged in loading vessels with each that there are dangars attending the loading of ships with coal, that there are dangers attending the loading of ships with coal which it would be very desirable that both he and his owner, Mr. John Hall, should endeavour as far as possible to avoid in future, and that the arrangements on board such a vessel as the

Caduceus, however well adapted for the carriage of grain cargoes, are not the only means proper to be taken for the surface ventilation of cargoes of South Wales smokeless coal."

REMUNERATIVE RAILWAYS FOR NEW COUNTRIES.

REMUNERATIVE RAILWAYS FOR NEW COUNTRIES.

The importance of railways for facilitating the opening up of new countries is so generally recognised in Europe and America that, to read the account of a railway being bought up by a government for the express purpose of stopping, it appears almost incomprehensible, yet from the account of railway experience in the Celestial Empire, given by Mr. R. C. Rapier ("Remunerative Railways for New Countries, with some account of the First Railway in China." By Richard C. Rapier, Telford Medallist, and M.I.C.E. Numerous illustrations and estimates. London: E. and F. N. Spon, Charing Cross), it appears that this has actually been done, and that there is a proposal to remove the railway, which is some nine miles long, to another place. The object of the work is to afford such information as would usually be given by a professional in answer to enquiries from those anxious to make railways in new countries, or in new districts of old countries. Mr. Rapier suggests that the practice of relying on guarantees for the interest on capital has to answer for much of the present stagnation and difficulty in introducing new works. In proposed railways abroad it has only been too common for a State to present stagnation and difficulty in introducing new works. In proposed railways abroad it has only been too common for a State to be asked to guarantee a dividend upon as large a capital as the authorities could be induced to sanction. Large capital powers, fortified by a government guarantee, are, he remarks, pretty sure to be exercised, and thus in many cases the expenditure has been quite out of proportion to the needs of the locality. As a natural consequence, the earnings of such railways have not been equal to the guarantee. It seems probable, in Mr. Rapier's opinion, that the next stage of railway development throughout the world will have to depend on the intrinsic merits of the undertakings, and their prospects of being able to earn their own living, rather than on any spects of being able to earn their own living, rather than on any tificial support.

Taking this view it is obviously of paramount necessity to secur

the best railway and working plant at the lowest cost, and Mr. Rapier certainly shows that he knows how to combine completeness with cheapness. He shows that a railway five miles long, including rails, sleepers, points, crossings, engine with tender for coals and water, with seats for six persons, first-class carriage for eight persons, and the seats for six persons, first-class carriage for eight persons, and the seats for six persons, first-class carriage for eight persons, and the seats for six persons, first-class carriage for eight persons, and the seats for six persons, and the seats for six persons, first-class carriage for eight persons and the seats for six persons are seasons. water, with seats for six persons, first-class carriage for eight persons, and 25 goods wagons carrying 23 cwts. each, can be supplied for 3216L, or at the rate of 64M, 4s. per mile. For a similar line ten miles long, and provided with two engines, the cost would be at the rate of 550L per mile, and for a similar line twenty miles long 500L per mile. For guidance as to the cost of freight, it is stated that for the five mile line there would be 120 tons of dead weight and 177 tons of measurement goods. Various other estimates increasing in strength and completeness are given, one—No. 8—providing 40 miles of railway, with five intermediate and two terminal stations, with 8 engines, 5 first, 5 second, and 20 third-class carriages, 160 goods wagons, 20 timber wagons, 20 cattle and sheep trucks, 10 horse boxes, workshop fittings, with engine, boiler, shafting, lathes, and machine, &c., for 98,840L, or 2471L per mile.

The account of the first railway in China is a particularly interesting one. For the last 20 years the introduction of railways into China has been a favourite topic, and in 1863 and 1864 Sir R. Macdonald Stephenson, who had already done so much for the development of railways in India, visited China with a like object, and was received with the utmost enthusiasm by the Chinese people. He pointed out the many advantages which railways offered, and these appeared to be fully recognised, but the Empire of China is like no

pointed out the many advantages which railways offered, and these appeared to be fully recognised, but the Empire of China is like no other. Her rulers have always held that any suggestions coming from without must necessarily be retrogressive. The Chinese themselves have a proverb that "true wisdom lies not in the servile imitation of the past; but in availing ourselves of such improvements as experience may have suggested," yet appear not to fully comprehend it. In 1865 a railway from Snanghai to Woosung was proposed, so that the larger steamers might avoid the difficult and changeable navigation to Shanghai. Mr. Heary Robinson planned the line over a similar road to that of the one recently constructed, proposing to carry it on piles and girders where it might interfere with graves or otherwise, disturb vested interests or prejudices of proposing to carry it on plues and greders where it might interfere with graves or otherwise, disturb vested interests or prejudices of the people. The house of Jardine, Matheson, and Co. had always given cordial support to railway proposals, but constant disappointments convinced them that the only way to make a railway would be to quietly acquire the necessary land, and make the line as an undertaking of their own under the sole control of themselves and their friends. The only roads with the name in China are those conundertaking of their own under the sole control of themselves and their friends. The only roads with the name in China are those constructed by Europeans, and these have sometimes been extended beyond their settlements. An expansion of this practice was Messrs. Jardine, Matheson, and Co.'s proposal to construct a road from Shanghai to Woosung. The acquisition of land for this purpose was, of course, a work of great difficulty, and one which could only succeed by being conducted in the most quiet and patient manner, and, therefore, much time was necessary for the preliminary stages.

In 1872 Mr. Rapier, ignorant of the project just mentioned, conceived the idea of sending a short railway with rolling stock to the Emperor of China as a present; but there were insuperable diplomatic objections to this, as such a present would have been accepted and paraded as tribute. But to be ready for any other opportunity Mr. Rapier designed and built at the Waterside Works, Ipswich, an engine, which should be strong enough to take an appreciable

an engine, which should be strong enough to take an appreciable load, able to run 15 or 20 miles an hour, and yet be so small that it could be packed up in a case, and sent out whole to some friend for trial and exhibition in China; the engine succeeded beyond expecta-tion, and when finished with 5-in. cylinders, provided with a large tion, and when finished with 5-in. cylinders, provided with a large water tank, so that it could carry water for a trip of a few miles, the total weight in running order was but 30 cwts. The Shanghai and Woosung Road Company, already referred to, had but 20,000. left after purchasing the land, all of which had to be acquired by private bargain with the 400 owners; and the sending out of the little "Pioneer" to Messrs. Jardine's road having been decided on, Mr. Rapier sought to provide a practicable passenger line (nins miles) for the remaining capital. Ballast being a very expensive item, it was proposed to have a very liberal supply of sleepers, 2500 to the mile; rails, 20 lbs. per yard; two engines, 6 tons weight each; one first, one second, and four third-class carriages, and a supply of plant of all kinds as moderately as possible. Eventually the rails were made 26 lbs. per yard, and the engines stretched to 9 tons. Even these moderate estimates exceeded the funds in hand. Mr. John Dixon then solved the difficulty by liberally offering to 9 tons. Even these moderate estimates exceeded the funds in hand. Mr. John Dixon then solved the difficulty by liberally offering to take a contract to make and equip the line for 20,00% in cash, and 8000% in shares; Mr. G. J. Morrison combined the duties of company's engineer and contractor's agent, and Mr. G. B. Bruce acted as honorary engineer in England. Mr. Morrison's five assistants were—John Sadler, foreman; William George Jackson, chief working engineer; David Banks, second working engineer; John Sadler, jun., second foreman; and George Sadler, general assistant.

The Chinese have always been very skilful in carrying heavy loads by manual labour—indeed, it would almost seem as if their redundant population were the natural substitute for the more scientific appliances of other less populous nations. However heavy the piece to be carried, its transport is only a matter of skilful arrangement of bamboos and ropes, and plenty of belp. Moreover, the weights carried per man would be no discredit to the most stalwart English

of bamboos and ropes, and plenty of help. Moreover, the weights carried per man would be no discredit to the most stalwart English labourer. Fifteen wooden bridges over the numerous little water-courses, and 20 substantial wooden culverts, had to be constructed; but rail-laying commenced one month after the arrival of the Pioneer, but rail-laying commenced one month after the arrival table and the first shipment of permanent way material, and in a week under two months (on Feb. 14, 1876) the Pioneer made its first trip on about 3 mile of rails. The delight of the Chinese people was unbounded; numbers flocked to see the little engine at work, and the interest manifested in the railway was continually on the increase. This was viewed with great alarm by the Tactai of Shanghai; and about Feb. 23 he was so pressing in his demands for a discontinuance of the work that a compromise had to be made to the effect that the running of the engine should be discontinued for a month, but the works were to proceed until he should receive definite instructhe works were to proceed until he should receive definite instruc-tions from Pekin. The month expired, and no further interference occurring it was presumed that at any rate no adverse instructions gest temp on so cials and in I have foreing be placed suits At

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^{*} Boing Notes on a Course of Lectures on Mining, delivered by Herr Bergrati Dr. Von Groddeck, Director of the Royal Bergakademie, Clausthal, The Harz Borth Germany.

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had come from Pekin, and the engine resumed work in the latter part of March. The interest, which was great before, was very much quickened by the stoppage and the resumption of the Pioneer's trips. Much in the same way as when the Lord Chamberlain complains of a play half London goes to see it, so the Chinese, having been told to have nothing to do with the railway, now flocked in thousands to the spot. The Times correspondent at Shanghai, March 31, 1876, wrote that literally thousands of people from all the neighbouring towns and villages crowd down every day, all perfectly good humoured to watch proceedings and criticise every item. Old men and children, old women and maidens, literati, artizans, and peasants—every class of eociety is represented. The engine, of course, is the great centre of attraction; it is engaged in dragging trucks with pebble ballast at present, and a general cry of "Laij tze! Laij tze!" (it is coming, it is coming) heralds each return journey. Then ensues a crowding around and an amount of introspection which suggests awful reflections in case of accident, and then the whistled signal to start; the fall of a live shell could scarcely suggest a greater stampede, except that laughter and perfect good temper are present instead of terror. Everything, therefore, is going on so far satisfactorily, and if the people are let alone by their officials they will quietly satisfy their curiosity, and go home amused and interested. They are giving practical proof at present of what I have always urged—that there is no instinctive dislike to things foreign. There is only a great deal of ignorance, which can easily be played upon by the officials, and dangerously misdirected if it foreign. There is only a great deal of ignorance, which can easily be played upon by the officials, and dangerously misdirected if it

foreign. There is only a great deal of ignorance, which can easily be played upon by the officials, and dangerously misdirected if it suits their purpose.

At every return trip of the empty ballast tracks they were recrowded with gratuitous passengers. Nor was this desire to try the nailway limited to the lower orders. Several times during the progress of the works Chinese personages of high rank came arrayed in their best clothes to take a ride in the ballast tracks. No other accommodation was available, but on such occasions Mr. Morrison would have seats placed in the trucks covered with red baize, and a carpet laid in the truck of the same material. As the works approached completion various sinister rumours began to float in the air as to the intentions of the governing powers, and a very politic step was taken in inviting various Chinese notabilities and all the foreign consuls to take an excursion trip; they all attended in full uniform to give the full weight of their official position in the right direction. All continued to go well, and the works were not interfered with. The company's engineers were continually besieged by applicants for the post of driver, the argument generally being that as the candidate had assisted in driving a steamboat on the river, he could equally well drive the "steamboat on shore," as the embryo train was called. (Steamboats were introduced into Chinese waters 20 years ago.) At a later stage the train was called the "fire-dragon carriages," but this was after the permanent engines and carriages had arrived. At first the rolling stock consisted of one first-class acrommodating 95 passengers, making 130 in all. It was thought necessary to have three classes of carriages, but in practice it was found that the proportion of passengers was one first and two second-class to 80 third-class passengers. The contract with Mr. Dixon, fixed July 1 for opening, and on June 30 about 150 European residents were invited to an opening trip in the permanent train over the first five miles fr

traffic commenced, and the receipts were of the most satisfactory character.

On festivals and holidays it was quite common for the train (of 130 seats) to start with 250 passengers, and leave more than that number behind. Extension of the line to Soochow was freely advocated by the newspapers (English and Chinese), and was generally spoken of as a step both desirable and probable. But this was not apparently to be realised, for in July, when (Mr. now) Sir Thomas Wade was endeavouring to settle the Margary dispute, he found that there was a predisposition in the minds of the Chinese to consider the murder of Mr. Margary as balanced by the death of a Chinese spicide on the railway (the only death which happened in connection with it). "We have killed one of your men, and you have killed one of ours," was the argument. Mr. Wade consequently sent a letter by special steamer from Chefoo to the Railway Committee at Shanghai requesting that the trains should cease running pending his negociations, and traffic was suspended; but it was found that the closing of the railway during an international discussion was a mistake, and virtually placed the whole undertaking at the mercy of the Chinese. The terms eventually made were that the provincial government should buy the line at cost price, that the money should be paid in three half-yearly instalments, and that until the whole should be paid the company should work the line. The first instalment was paid down, and this gave the railway just one year of grace for practical work. It was hoped that the ownership of the line being vested in the Chinese might have a good effect, and that the authorities might feel more interest in an undertaking which had now become their own. At first this seemed likely to result, and there was some talk of Tong King Sing being appointed general manager of the line after the year of grace should expire. Although goods traffic was prohibited, the line frequently earned 27% per mile per week. An extensively signed petition to continue the wor goods traffic was prohibited, the line frequently earned 27L per mile per week. An extensively signed petition to continus the working of the railway was presented, but on Oct. 19, 1877, the Mandarins commissioned for the purpose intimated to the company that the balance of the purchase money would be paid the following day. The money was duly paid, the Mandarins declining to ride by it to Woosung, and its closing was ordered two days afterwards—the railway was bought and paid for in hard cash for the sole purpose of stopping it. The closing scene showed the people crowding to the railway, and the rulers preferring sedan chairs: but the impression which it has made upon the people will probably never be eradicated. The line may even be taken up, but the seed has been sown, and it will bear its fruit

The volume will prove exceedingly useful to a large number of

The volume will prove exceedingly useful to a large number of readers; and, in addition to supplying a vast amount of technical information, is written in a style which will make it attractive even to the general reader.

Practical Engineering.—General Henry Hyde, R.E., of the India Office, and Associate in Council of the Institution of Civil Engineers, on Saturday, distributed the certificates awarded by the examiners for the summer term in the Crystal Palace Company's School of Practical Engineering. Sixty certificates were taken. The first in each class was as follows:—Lecture work, P. J. Ogle; drawing-office, A. T. Anderson; pattern-shop and foundry, A. C. Pickthall; fitting shop, M. F. Wilson; general surveying, F. J. Scott; railway and dock work, W. A. Fenton: design and construction, G. S. Aitken. The examiners were Mr. Ernest Benedict, M.I.C.E., and Mr. J. W. Grover, M.I.C.E. The report, which was generally laudatory of the work done, concluded by recording the examiners' opinion of the great value of the school, "which in our belief will satisfy a long-felt want in this country. We desire especially to commend the idea of the Colonial Department, which, in connection with the Practical Engineering School, will, we believe, lead to most valuable results in regard to the numerous young men who now seek a liveli-Practical Engineering School, will, we believe, lead to most valuable results in regard to the numerous young men who now seek a livelihood by adventurous labour or professional work abroad and in our colonies." General Hyde said that, from extended practical experience in India and elsewhere, he knew the urgent need of such instruction as that given in this school for the profession, and having that morning carefully inspected all the divisions of the institution, and the work done in them, as well as the encampment on the island in the lake, where the colonial students were practically instructed in shifts and expedients, construction of a bridge, and the like, he could say that the need recognised by himself and referred to by the examiners was fully met by this school. He gave a great deal of practical advice to the students. Mr. H. T. Bicknell, deputychairman of the Crystal Palace Company, expressed the thanks of chairman of the Crystal Palace Company, expressed the thanks of the directors to the eminent engineers who had officiated as examiners, and to General Hyde. Mr. Benedict replied. The work pro-

The general application of metal in every branch of industry, and for all kinds of domestic purposes, has placed those connected with the metal trades among the most numerous class of manufacturers; for all kinds of domestic purposes, has placed those connected with the metal trades among the most numerous class of manufacturers; and the large number of persons constantly requiring addresses, and other particulars concerning such manufacturers, rendered a special directory absolutely necessary. The enormous task of compiling it was undertaken some years since by Messrs. Kelly, the well-known proprietors of the Post Office London Directory, and the extent to which their labours were appreciated may be judged of from the fact that two large editions have been entirely sold, and the third edition of "The Post Office Directory of the Engineers and Iron and Metal Trades, and Colliery Proprietors; comprising every trade and profession in any way connected with the above trades throughout England, Scotland, and Wales, and the principal towns in Ireland" (London: Kelly and Co., Great Queen-street, Lincoln's Inn Fields), is now before us. Whatever branch of the metallurgical industries one may be connected with from the raising of the ores from the mines in this country, or their importation here, through all the various processes to which the metals are subjected, until the immense variety of articles composed of them have been produced in their most finished forms, no difficulty will be experienced in ascertaining the names and addresses of all connected with it.

duced in their most finished forms, no difficulty will be experienced in ascertaining the names and addresses of all connected with it. The extent of the industries embraced in the directory can be judged of from a reference to the latest published statistics. There are 3722 collieries, 600 iron and ironstone mines, 390 lead mines, 80 copper mines, 103 tin mines, 11 zinc mines, 35 iron pyrites mines, and 25 barytes mines, in addition to fire-clay, limestone, and other workings. During 1877 no fewer than 494,391 persons were employed about mines, 57,395 of these being engaged in and about the metalliferous mines. The exports of coal, metals, and machinery have fallen from 63,000,000% in 1874 to 45,000,000% in 1876, the last year for which returns are available; but as trade is now reviving, it may be hoped that subsequent years will show a return to the former figures, and a directory may greatly expedite the revival by facilitating intercommunication between retailers and consumers, and the manufacturers upon whom they are tailers and consumers, and the manufacturers upon whom they are

tailers and consumers, and the manufacturers upon whom they are dependent for their supplies.

With regard to the arrangement of the directory, the first 225 pages are occupied by a classified list of the London firms, and there are then nearly 2000 pages occupied by two complete country lists, the first giving the trades in alphabetical order, and the second alphabetical lists of places, each county being dealt with separately. The annual value of the mines and ironworks charged with income tax is shown by the return just issued to be 16,878,859%, equal at 3d. in 11. to 210,980%, but it is not alone the large firms and prosperous tradesmen who have contributed to this who are included in the directory, which embraces everyone connected, even down to the village smith, and the particulars have in each case been collected after personal enquiry by agents selected for the purpose. The work is in every respect equal to its predecessors, and cannot fail to prove extremely useful.

MILLS AND MILLWORK.

The enormous progress which has been made in connection with mills and millwork during the past half-century has contributed in a large degree to the very satisfactory development of many branches of our national industry which has taken place, and few names are more favourably known in connection with the improvement of the millwright's art than that of William Fairbairn. His ment of the millwright's art than that of William Fairbairn. His writings upon the subject to which he devoted himself have proved of perhaps greater utility to practical men than those of others, because whilst thoroughly systematic and strictly accurate they are free that dryness by which many mechanical works are characterised. Some 15 or 20 years since he undertook to publish the results of his experience in millwright construction, and so well was the work received that new editions were issued, and the opportunity was taken to correct the little inaccuracies which at first escaped notice. The fourth edition* has now been published, and will probably receive as much attention as its predecessors, especially as the subject treated of is now much more generally studied than at the time when the first volume appeared.

receive as much attention as its predecessors, especially as the subject treated of is now much more generally studied than at the time when the first volume appeared.

It was very truly remarked that the millwright of former days was to a great extent the sole representative of the mechanical art, and was looked upon as the authority in all the applications of wind and water, under whatever conditions they were to be used, as a motive power for the purposes of manufacture. He was the engineer of the district in which he lived—a kind of jack-of-all-trades—who could with equal facility work at the lathe, the anvil, or the carpenter's bench. In country districts far removed from towns he had to exercise all these professions, and he thus gained the character of an ingenious, roving, rollicking blade, able to turn his hand to anything. He wandered from mill to mill in search of work, and was every where recognised as an itinerant engineer and mechanic of high reputation. He could handle the axe, the hammer, and the plane with equal skill and precision. He could turn, bore, or forge with the ease and dispatch of one brought up to these trades, and he could set out and cut in the furrows of a millstone with an accuracy equal or superior to that of the miller himself. These various duties he was called upon to exercise, and seldom in vain, as in the practice of his profession he had mainly to depend upon his own resources. Generally he was a fair arithmetician, knew something of geometry, levelling, and mensuration, and in some cases possessed a very competent knowledge of practical mathematics. He could calculate the velocities, attenuth, and nower of machines could

of geometry, levelling, and mensuration, and in some cases possessed a very competent knowledge of practical mathematics. He could calculate the velocities, strength, and power of machines, could draw in plan and section, and could construct buildings, conduits, and water-courses in all the forms and under all the conditions required in his professional practice. He could build bridges, cut canals, and perform a variety of work now done by civil engineers. The introduction of the steam-engine, and the rapidity with which it created new trades, proved a heavy blow to the distinctive position of the millwright, by bringing into the field a new class of competitors in the shape of turners, fitters, machine makers, and mechanical engineers; and, notwithstanding the immense extension of the demand for millwork, and the great stimulus which it afforded to the manufacturers of the country, it nevertheless lowered the mechanical engineers, and, individualizing the immense extension of the demand for millwork, and the great stimulus which it afforded to the manufacturers of the country, it nevertheless lowered the position of the millwright, and levelled it in a great degree with that of the ordinary mechanic. The author is persuaded that there is no class of mechanics so intelligent, or who work harder, than the millwright, or who exercise a sounder judgment in the performance of their varied duties in the perfect execution of their work. Taking them as a body, he believes there is not a more trustworthy or a more respectable class of men in existence. He makes this statement from experience, and has great pleasure in doing so. It used to be a custom, before the days of Mechanics' Institutions, for the millwrights to form one for themselves in every shop. Their meetings were generally held at a publichouse on Saturday evenings, and many were the times when long discussions on practical science and the principles of construction were carried on between rival disputants with a fiery eagerness which not unfrequently ended in a quarrel, or effected a settlement by the less rational but more convincing argument of blows. It was a rough way of imparting knowledge, but it was not worse than that practised in the schools and seminaries of the day, where the application of the rod was the general remedy for dull apprehensions and indocile minds. This was beginning at the wrong end—endeavouring to impart knowledge to the parts of the body instead of appealing the day. general remedy for duli apprehensions and indocite minds. This was beginning at the wrong end—endeavouring to impart know-ledge through the sensitive parts of the body instead of appealing to the higher organs of the intellect.

The early history of mills given in the introductory chapter is a particularly interesting one, and the reader is then carefully led through the entire subject. In the chapter explaining the principles of mechapism are given general views relating to machines, and de-

of mechanism are given general views relating to machines, and details of the elementary forms of linkwork, so that he is well pre"Treatise on Mills and Millworks." By Sir WILLIAM FAIRBAIRN, Bart., O.B.,
LL.D., F.R.S., &c Fourth Edition. London: Longmans, Green, and Co.

duced by the students was displayed in the several shops and offices in the South Tower, and after the proceedings many of those present proceeded to visit the encampment.

POST OFFICE METAL TRADES' DIRECTORY.

The general application of metal in every branch of industry, and for all kinds of domestic purposes, has placed those connected with memoir on the subject, and the remaining section on the arrangement of the metal trades among the most numerous class of meaning features. ment of mills is so subdivided that anyone can at once turn to the particular class of mill in which he is especially interested. There is a most attractive chapter on mill architecture, followed by others

on core, cotton, woollen, flax, silk, oil, paper, powder, and iron mills whilst various special inventions are referred to in appendices.

The work is so widely known that it would be superfluous to say anything of its merits, further than that it is in every respect equal to its medicesseer.

CANADIAN INDUSTRIES, AND THEIR DEVELOPMENT.

The appointment of the Marquis of Lorne to the Governor-Generalship of Canada has given such general satisfaction throughout the Dominion that it is felt by all that the effect will be to cause a revival of business, in the advantage of which all will participate. No selection says one influential Ontario journal could have shown greater confidence in the future of the country, and none could be more beneficial. It will turn all eyes in Britain towards Canada, and bring thousands to admire the natural scenery and study the material resources of the country, whilst another observes that the additional bond created justifies the hope that the direct interest which will now be taken in Canada will increase even the material prospects of the Dominion. Now, it can screely be doubted that the attainment of success in the development of the The appointment of the Marquis of LORNE to the Governor-

direct interest which will now be taken in Canada will increase even the material prospects of the Dominion. Now, it can searcely be doubted that the attainment of success in the development of the natural and industrial resources of a country is much facilitated by the superintendence of the necessary works being in the hands of natives, who may be assumed to be better acquainted with advantages that can be turned to account, and with the general mode of doing business, than outsiders can be expected to be; but this view likewise assumes that the natives possess sound scientific knowledge of as high a standard as that which can be imported, for otherwise the advantage will be with the imported managers or workmen, and the natives will sink into obscurity.

The great efforts made in Nova Scotia for facilitating the acquisition of the requisite technical knowledge without leaving the Dominion have frequently been referred to in the Mining Journal, and mention may now be made of a movement which, to judge from the result of the past year's operations, is likely to prove a very important one. The TECHNOLOGICAL INSTITUTE was established a year ago, for the purpose of providing in Halifax instruction in those branches of science, art, and literature which are especially useful to persons desirous of qualifying themselves for engaging either as workmen, foremen, managers, or proprietors in the various mechanical, agricultural, mining, and chemical industries, and already a very large number of students have been enrolled. The Faculty of Instructors is an unusually strong one, and it is evident that there has been a determination to avoid waste of energy by the creation of ornamental officials, for Professor Lawson, the president, holds the chair of agricultural chemistry and botany; Dr. Somers, the vice-president, that of zoology; the Rev. Dr. Honeyman, the treative other instructors, all gentlemen of established position, such as Messrs, H. S. Poole, the Government Inspector of Mines; R. G. Fraser, the Government An for, as Prof. Lawson remarked at the annual meeting, it is not the possession of raw material, the most valuable mines, the richest soils, or teeming waters that enables a country to rise in wealth and importance, and support a large population in comfort and luxury, but the capacity of the people themselves to turn them to marketable

account.

The important task of increasing the skilfulness of those who have to labour in any way with their hands is precisely that of a technological school which does not interfere with either the college or the workshop, but seeks to qualify youth for acquiring dexterity and skill in the various mechanical, agricultural, and other avocations in which they may engage. To judge from the programme for the ensuing year much care and judgment have been displayed in the arrangement of the subjects to be taught and of the methods of teaching them, so that the continued usefulness and success of the Technological Institute may reasonably be anticipated.

FOREIGN MINING AND METALLURGY.

In the Belgian coal trade there has been rather an improvement in the demand on the part of industrials; the latter anticipate some little change for the better in the Belgian iron trade, but they some little change for the better in the Belgian iron trade, but they prefer to wait rather than to enter into contracts with any rashness. If the improvement in the situation should be serious, and should present any prospect of durability, coal will, no doubt, so on experience an advance. Upon the whole, the state of affairs may be summed up as follows:—The present is a little less unfavourable and the demand is more active, especially for industrial qualities, but prices remain very low. The exports of coal from Belgium to foreign countries have remained as nearly as possible stationary this year.

to foreign countries have remained as nearly as possible stationary this year.

The Belgian iron trade is considered to be in a somewhat better state. This appears to be due to the conclusion of some contracts for rails. Thus the John Cockerill Company has contracted to supply the South Italian Railway Company with 10,000 tons of Bessemer steel rails. The Acox Forges Company has also obtained a centract for 1000 tons of rails weighing 80 lbs. per 40 in., another for 900 tons of rails for tramways, and another for 1000 tons of scrap-iron, the whole to be delivered within a comparatively short period. The Belgian rolling-mills appear to be tolerably well off for work; this is due to the reception of a number of small orders. Of some articles—bolts for instance—considerable difficulty is experienced in obtaining prompt delivery. Without affirming that there is a general revival in affairs, we may go the length of declaring that there has been an improvement in the situation. The Meuse Workshops Company has just fitted up a drainage engine of 150-horse there has been an improvement in the situation. The Meuse Workshops Company has just fitted up a drainage engine of 150-horse power at the Louette Colliery. The Belgian builders of railway plant are complaining a good deal; they are almost entirely dependent on orders from the administration of the Belgian State lines, orders which are given out at very unremunerative rates. The company owning the Bougival and Port Marly Tramway, near Paris, has just ordered some carriages of a new type from the Belgian Metallurgical Company. The quantities of minerals and limailles imported into Belgium in the first six months of this year were 336,000 tons, against 345,000 tons in the corresponding period

limailles imported into Belgium in the first six months of this year were 396,000 tons, against 345,000 tons in the corresponding period of 1877, and 356,000 tons in the corresponding period of 1876.

The annual meeting for 1878 of the British Iron and Steel Institute will be held at Paris on Sept. 16,17, and 18. Creusot and Terrenoire have already consented to open their works to all members of the Institute, and other firms will, no doubt, follow the example. A banquet will take place during the meeting. His Royal Highness the Prince of Wales, His Majesty the King of the Belgians, Earl Granville, the Duke of Devonshire, M. Teisserene de Bort, Mr. Bessemer, and other celebrities, will "assist" at this banquet. M. Tresca, President of the Paris Society of Civil Engineers, will occupy the chair at the banquet.

President of the Paris Society of Civil Engineers, will occupy the chair at the banquet.

In the French coal trade matters have not experienced any very marked change. The four great coal mining companies of the Loire basin have made up their accounts for 1877, and in each case less lucrative results are disclosed than those realised for 1876. Thus the profits of the Loire Mines Company in 1877 were 38,400L, as compared with 48,000L in 1876; those of the Rive-de-Gier Company were 6400L, as compared with 19,200L; those of the Montrambert Company 128,000L, as compared with 136,000L; and those of the St. Etienne Company 32,000L, as compared with 48,000L.

The iron trade remains in a depressed state in the French depart-

ment of the Haute-Marne; there would appear, indeed, to have been a slight aggravation of the difficulties of the situation. There has been a rather marked slackening in affairs. This contraction of business is usually remarked at this season of the year, but at the same time the fact cannot be ignored that producers, not being able to obtain any improvement in selling prices, have been under the necessity of restricting their production. In the Nord industrials are coming to the conclusion that it is necessary at all hazards to make a stand for better prices; they urge that they might as well be idle as sell iron at 54.16s, per ton. In the Meurthe-et-Moselle transactions are becoming difficult. The proprietors of forges exhibit little disposition to purchase; pig for refining is quoted at about 24.11s, 6d, per ton, but producers show little disposition to do business upon these terms. In the Ardennes the forges have few orders, and their proprietors have been obliged to slacken their production to a rather marked extent. In the Loire-et-Rhone group large a slight aggravation of the difficulties of the situation. There has been to a rather marked extent. In the Loire et Rhone group large orders make default, but the markets for iron and steel are pretty well sustained by small orders. Plates are readily disposed of, and steel is in some demand in this last-mentioned group.

ENGLISH GEOLOGISTS IN FRANCE.

A party of English geologists, mostly members of the Geologists Association, upwards of 30 in number, under the leadership of Prof. Morris, F.R.S., F.G.S., arrived at Boulogne on Aug. 6 by the Folkeshorts, F.A.S., arrived at Bollogne on Aug. 5 by the Folkestone steamer Alexandra, Capt. Paul, to explore the country around Boulogne. Their intention having been communicated to M. A. Hugnet Senator, Maire of Boulogne, he convoked the local geologists, the members of the Société Académique de Boulogne, the Société Médicale, the committees of the Public Library and of the Museum, and invitations were at the same time sent to the Presidents of the Geological Societies of Paris, Lille, &c., to meet their scientific brethren from across the Channel, and give them a proper welcome on this the first occasion of English geologists in any number visiting France.

On landing, Prof. Morris and his colleagues were met by two French swants, who conducted them to the Etablissement des Bains, where were assembled the members of the above named societies, M. Edmond Pellat, ex-President of the French Geological Society; Dr. Ch. Barrois, Vice-President of the Société Géologique du Nord de la France; Prof. Giard. several distinguished French engineers and France: Prof. Giard. several distinguished French engineers and scientific men, Mr. W. Stigand, British Vice-Consul—in all between 80 and 100 persons—presided over by M. Huguet, who offered a vin d'honneur to the new comers. In a short speech the Maire bade them welcome, and hoped he should have the pleasure of welcoming other deputations of scientific enquirers. Prof. Morris replied for the geologists. He stated that the Boulonnais was well known by context all facility is breakenit to the depart these subtractions.

the geologists. He stated that the Boulonnais was well known by repute to all English geologists; it had been thoroughly explored by their predecessors in the science of geology. Discovery was not so much the object of their visit as the verification of a certained facts and the inspection of a well-known geological country.

The ceremony lasted about three quarters of an hour, and a large number of the English geologists immediately proceeded to Wimereux, a favourite spot with geologists, where Prof. Giard has established his Laboratoire de Zologie Maritime, which supplies the students of the Lille Academy with the means of prosecuting their zoologic studies. It was founded in 1873.

The district of Le Boulonnais presents a wide field for geological research, its undulating surface with its broken and irregular coast line and high cliffs presenting to view numerous strata. The late Sir Roderick Murchison was very fond of a ramble along the coast

Sir Roderick Murchison was very fond of a ramble along the coast with his French geological friend, the late M. Bouchard Chantereaux. with his French geological triend, the late at Bouchard School Both collected numerous fossil remains, and wrote papers on the subject, as have also Messrs. Conybeare, Phillips, Webb, and others. The coast from Cape Blanc-Nez, round by Cape Gris-Nez, past Bouche coast from Cape Blanc-Nez, round by Cape Gris-Nez, past Bouche Cape Alexago shows strata corresponding to those which The coast from Cape Blanc-Nez, round by Cape Gris-Nez, past Boulogne, to Cape Alprech, shows strata corresponding to those which come to the surface in various parts of Kent and Sussex. A few miles inland is a range of hills dividing the Haut Boulonnais from the Bas Boulonnais. These hills start from Cape Blanc-Nez, run through the Forêt de Boulogne round by Samer to Neufchâtel and towards Etaples, the country enclosed between these hills and the sea forming the basin of Bas Boulonnais. In addition to these natural facilities for geological research, two artificial opportunities have of late years presented themselves, of which the local geological research. have of late years presented themselves, of which the local geologists have not failed to take advantage—first, the deep cuttings made in the neighbourhood of Honvault for the Boulogne and Calais Railway, during the progress of which several fine fossils were found way, during the progress of which several had rossis were found; second, the boring at Sandgatte between Cape Blanc-Nez and Calais for the Channel Tunnel. This boring, which reached a depth of nearly 300 ft, traversed several strata. Specimens taken from each lift of the boring scoop have been properly classified, labelled, and placed in a museum attached to the superintendent of works' house. A full account of the Channel Tunnel works at Sandgatte was given in the Times, June 6, 1876. In addition to these two important works at sandgate was given in the Times, June 6, 1876. In addition to these two important works the excavations continually going on throughout the Boulonnais for ph sphates and iron ore often bring to light fossil and Roman remains, which are preserved in the Boulogne Museum. This museum, in addition to its galleries of natural history curiosities from all parts, numismatic and other collections, now boasts of 4000 geological and paleontological specimens, many of them found in the district, 4000 shells, 200 corals, and 3000 mineralogical specimens. Unfortunately, many of the fossil remains are far from perfect. Placoides are represented only by sone teeth of the Strophodus subreticulatus, which have been found in the Kimmeridge and Port and the form of the strophodus autributed to the spinule of the strophodus and port and the strophodus and port and the strophodus autributed to the spinule of the strophodus and port and striphythesis are deficiency as triphythesis are spinule for the strophodus and port and striphythesis are activities and the strophodus and positive and the strophodus are striphythesis. trata. These deficiencies are attributed to the animals after having been washed about the coast by the action of the waves previous to their becoming imbedded in the clay, whereas at Solenhaufen and at Circy entire skeletons have been discovered owing to the animals having died in their native inland waters, at the bottom

of which they have become embedded without previous dislocation.

The neighbourhood of Boulogne is rich in remains of the dwellings and tombs of man at the earliest period of his history. At Andréhun and Halinghen they are in great numbers upon the hill, and flint in-truments are also plentiful. Hydrequent, La Basse Falize, and La Grotte de Cléves in the Vallée Heureuse, which was female by the unboard and dislocation of the archevile. formed by the upheaval and dislocation of the carboniferous strata, have yielded interesting specimens of their early inhabitants, bones and the teeth of animals having been found in the caves along with flint in-truments.

Mr. S R. Pattison. F.G.S., who takes the scientific leadership of

the excursion, has drawn out his programme to extend from the 5th to the 9th of August, and has fully occupied every hour.

The inhabitants of Boulogne are at present fully occupied with organizing a grand fête, to be held on the 2nd of September, in honour of the laying of the foundation stone of the new harbour. The ceremony will be performed by the Minister of Public Works, assisted by the Minister of Marine. Two hundred invitations have been sent out, including those sent to the Lord Mayor of London and the Mayors of the neighbouring, towns on both sides of the Channel.

SAFETY VALVE FOR STEAM BOILERS .- The invention of Mr WILLIAM EAVES, of Sheffield, has for its object the adaptation and application to steam-boilers of an entire ball, for the purpose of a application to steam-boilers of an entire ball, for the purpose of a safety-valve for the escape of steam as required, such valve being capable of being moved repeatedly, so as to present a fresh face to the seating, and thereby economise the use of the valve. And his invention consists in the use of a ball made of brass, or other suitable material, resting on a seating of steel or other suitable metal or substance harder than that of the ball, and pressed down as required on to the seating by means of a weighted frame capable of swinging freely on the ball. This ball is sufficiently large in diameter to admit of its being moved a number of times on its seating, so as to present each time it is moved a fresh face to the seating, no one face intersecting another. The said ball may also be moved at convenient intervals before being worn on any one face. The valve or ball is weighted with ordinary dead weights, face. The valve or ball is weighted with ordinary dead weights, but the frame by which the weights are suspended, instead of being but the frame by which the weights are suspended, instead of being which descends inclines, and when engine-power would not only not fast to the valve, as usual, is made to swing freely on the ball at the top by means of a centre piece of suitable concave form, lined with soft metal or other suitable material, to prevent injury to the ball.

The lift of the valve is regulated by means of screws, which are screwed into the lower part of the said weighted frame, and are adapted to limit the rising of the ball from its seat by coming in contact with a collar on the stand pipe to which the valve or ball is applied. By this means is obtained a valve composed of an entire ball, adapted for use as a safety-valve for the escape of steam from steam-boilers.

THE MINES ON THE SCHNEEBERG TYROL.

These mines, amongst the most elevated in Europe, were formerly wrought for argentiferous lead ores, having in 1485 employed 1000 men. In 1868 they were reopened, and it was determined to utilise the large discoveries of zinc-blende which, together with some galena and a little copper pyrites, form the bulk of the metallic contents of the lodes. These lodes are from 7 to 56 ft, thick, and have been proved in direction for a distance of about 1½ mile, and by the outcrops in depth to more than 2700 ft. The chief point of interest is in the great differences of level that have to be overcome in the transport of the mineral from the mines to the dressing floors and smelting works across intervening mountain ridges. The S. Martin's, transport of the mineral from the mines to the dressing floors and smelting works across intervening mountain ridges. The S. Martin's, or principal working level, lies 7763 ft. above the sea level, and there are númerous workings above and below this point. The Kaindl tunnel, by which a principal ridge is crossed, lies at an altitude of 8262 ft. The principal arrangement of the roads in this very broken system of transport are the following:—A lift 1459 ft. long, 623 ft. vertical height, rising on the ridge above the Passeyer valley. connects, by a railway 2079 ft. long with a second lift, 2735 ft. long and 465 ft. rise, with one end of the Kaindl tunnel. This is 421 ft. long, and crosses the ridge to the Lazacher Valley. From this point the road is all downhill, commencing with an inclined plane 2332 ft. long and 1125 ft, fall, to a cart-road about 3½ miles long, on a gradient of 1 in 11, leading to Meiern, where there is a second inclined plane 846 ft. long, and 479 ft. fall, at the bottom of which new and large dressing floors are in course of erection. From the new dressplane 846 ft. long, and 479 ft. Iall, at the bottom of which new dressing floors are in course of erection. From the new dressing floors a road of 5 miles, on a gradient of 1 in 135, leads to a third inclined plane, 1430 and 479 ft. fall, to a point on the road to the Sterzing, about 3\frac{3}{4} miles distant from the railway station. From this it appears that the stuff from the mine travels first uphill about 1100 ft. for about 1\frac{1}{4} mile to the summit, thence about 3240 ft. down in 5 miles to the dressing floors. The further distance to the station is nearly 10 miles.

A portion of the ore, that containing lead, is dressed at the mines A portion of the ore, that containing lead, is dressed at the mines; the works, which from their altitude can only be used during four months of the year, include 40 heads of stamps, eight V-channel classifiers (spitzlutten), two spitzkasten eight percussion and jagging sieves, and ten double Rittinger percussion tables, the power being supplied by an overshot wheel driven by the water of the Schwarzensee, a lake 7400 ft. above the sea level. The lower works at Meiean, which are available during nine months in the year are disided into two parts; that for the general mineral containing Rules. vided into two parts: that for the coarser mineral, containing Blake vided into two parts: that for the coarser mineral, containing Blake crushers, picking tables, sizing drums, and coarse jiggers, is driven by a water pressure engine, on Mayer's principle; the second, for the finer sizes, driven by a Girard turbine, contains 20 heads of stamps, and ten double percussion tables, besides the necessary centrifugal pump elevators and slime pits; a third portion containing the crushing rolls is not yet erected. In their present condition, the mines are equal to an annal production of 2500 to 3000 tons of blende in lumps, and 4200 to 4500 tons in various dressed sizes, averaging 42 to 45 per cent, produce for zinc and 320 tons of dressed lead one 42 to 45 per cent. produce for zinc, and 320 tons of dressed lead ore, but when the machinery and road are completed these quantities will be increased threefold.

By F. W. von FRIERE: Oesterreichische Zeitschrift für Berg- und Hütten-

* From James Forrest's "Abstracts of Papers in Foreign Transactions and Periodicals," for the Proceedings of the Institution of Civil Engineers.

GAS MOTORS FOR TRAMCARS.

GAS MOTORS FOR TRAMCARS,

The question of introducing mechanical motors for tramcars has long been receiving attention, but hitherto it is only in exceptional cases that horse traction has been superseded. Messrs. Hillton and Jackson, however, of Pendleton, have invented a motor which it is believed will prove generally available. Their object, and in this they appear to have thoroughly succeded, has been to provide motive-power for tramcars and other self-propelling vehicles, which shall be comparatively noiseless, convenient, reasonable in cost, and unobjectionable in sanitary and esthetic relations. For that purpose they employ gas engines of any approved construction, compressed air engines, or petroleum or other like motors which require little or no attention, work comparatively noiseless, and create no nuisance in other respect. They employ engines of one or more cylinders, turning a crank shaft or main driving shaft, with or without a fly-wheel, the latter being either keyed upon it or geared to it; from this shaft they drive on to the driving axle, by means of spur wheels, bevel wheels, with or without intermediate shafts, chains and chain wheels, or friction wheels, the driving wheel being loose upon the crank shaft, and made to be carried round with it by means of friction clutches sliding on feathers, and regulated in the nearly way. In the case of root reversible are round with it by means of friction clutches sliding on feathers, and regulated in the usual way. In the case of non-reversible engines two clutches and intermediate wheels are employed, or bevel wheels and shaft (the bevel wheels being feathered upon the shaft or the axles). With these friction clutches the engines may be going full speed and the driving axle be absolutely motionless, or moving at any desirable speed not exceeding that of the engine; this does enables the gradual application of the load without shock to the engine or car. In some cases, however, they turn the driving axle direct. The engine or engines may be placed in a cabin occupying the centre or an end of the tramcar, in such a manner that in each case room be left for passengers to pass the same on one or both sides, and so that the car may go either end first: proper access to the cabin by doors being provided.

In reversible cars, or those running circuitous routes, and thus the course of always formers the full width of the front the care of always formers the full width of the front the care of the ca

In reversiole cars, or those running circuitous routes, and thus having the same end always foremost, the full width of the front end may be occupied by the engine-room. In certain cases the engines may be placed under the carriage floor or in lateral recesses, or they may be placed overhead, partly or entirely out of the way of passengers, being suitable encased against atmospheric and other or passengers, using suitable encased against atmospheric and other interferences. The engine, and all or part appertaining to it, may also be placed on a separate truck or vehicle, which will then act similarly to a locomotive. The guiding or steering, the brake, speed regulator, and reversing and stop motions are worked by rods, chains, screws, levers, and other gear, or any of them, or a combination of any two or more, in such a way as to be accessible at each and of double-ended cars, and on one end of single-ended ones, or in and on on of single-end end of double-ended cars, and on one end or single-ended ones, or in the cabin itself. Reversible or swivel cars—i.e., those that allow the body to be turned round while the frame remains stationary in order to have always the same end of the body forward, may also be propelled by similar arrangements, the gearing being so arranged that it will disengage sideways on the car being swivelled, and re-

geared on the body taking its new position.

The fuel is stored in reservoirs occupying any available space, such The fuel is stored in reservoirs occupying any available space, such as that under the seats, between the carriage floor and the axies, overhead, and the like, or a part of the room of the vehicle may be appropriated to it. In the case of gas, the reservoirs may take the shape of metallic telescopic holders, or bags of leather, india-rubber, or other suitable materials; they may be weighted or loose, according to the requirements of the motor. If storage room be limited the required quantity of gas may be compressed into the available space either by machinery provided at the stations or by a compressor in the engine-room, worked by the car motor while taking a fresh supply of gas. This compressor may also be geared with a friction clutch. For petroleum or other oil, iron, copper, or other tanks may be substituted and pumps employed if desirable. If compressed air be used the ordinary reservoirs, suited in shape to the various requirements of the space may be used, and a separate compressor be provided on the car which is thrown into gear when the

age of fuel, the employment of friction clutches, the employment of compressors, and the arrangement for steering, brake power, and speed regulators of the engine.

Registration of New Companies.

The following joint-stock companies have been duly registered:-NEW OATHEDRAL COPPER AND TIN MINING COMPANY (Limited).

—Capital 12,000., in 12,000 shares, of 11. each. Registered at Truro on August 8,

To purchase, under an agreement dated July 22, 1878, and work certain mining

setts in the parish of Gwennap, Cornwall, hitherto known as the Cathedral Mine.

The first directors are James Laby, W. H. Lethbridge, James Waiton, and A.

Murray, who, with three others, subscribe the Memorandum and Articles of association for one share each. The registered office is to be at 63 and 63, Cornhill,

London.
GORS FARM LEAD MINING COMPANY (Limited).—Capital 10,000l., in GORS FARM LEAD MINING COMPANY (Limited).—Capital 10,000l., in GORS FARM, parish of Yscefiog, Flint. The subscribers are—E. Oswald, Oawley-road, Hackney, agent, J. W. Williams, 17, Holborn, E. C., accountant, 1; W. Pearse, S. Wellington Buildings, South Castle-street, Liverpool, surveyor, 5; E. Palmer, Guilford street, better proprietor, 5; J. F. G. Kromschroder, Silvester-terrace, Walthamstow; W. Fish, S. Wellington Buildings, Liverpool, insurance agent; G. Rowley, Sootland-road, Liverpool, corn dealer, 1; Thomas Kent, Presson-road, Liverpool, box keeper, 1.

Liverpool, insurance agent; G. Rowley, Sociand: road, Liverpool, corn dealer, 1; Thomas Kent, Pressons-road, Liverpool, book keeper, 1.

IMPERIAL LIVE STOCK IN: VLRANCE ASSOCIATION (Limited).—Capital 50,00 %, in 22. shares. To insure live animals, &c. The subscribers are —J. H. Bignold, Oxford and Cambridge Club, 150; G. A. Loundes, Bannington Hall, Broadoak, Essex; B. Smily Essex, 446. Strand, 50; W. H. Swinton, Guildford; R. Loulam, 11, Abchurch-lane; R. R. Prior, Holloway; J. S. Crouther, 81, Engled-led-road, Canonbury.

ATTOMATIC JACQUARD KNITTING MACHINE AND MANUFACTURING COMPANY (Limited).—Capital 75,000L, in 102. shares. To carry out improvements in knitting machinery, &c. The subscribers (who take one share each) are —E. Garnett, Graoe-street Mills, Leeds; W. Lucas, Bury; B. J. Mills, 19, Nicholassquare; F. D. Poulter, 35, Basinghall-street; O. A. Mart, 28, Queen's road, Peckhur, PEN-Y-BRYN MINING COMPANY (Limited).—Capital 6000L, in 11. shares, PEN-Y-BRYN MINING COMPANY (Limited).—Capital 6000L, in 11. shares, To acquire the Pen-y-Bryn Mines, in the parish of Holywell, Flint. The subscribers are —A. J. W. Strington, Darnecombe, near Moss Side, Manchester, accountant, 10; J. Wooloock, Holywell, mining capitain, 10; J. T. Eachms, Holywell, draper.

BRICE LAND AND MINING COMPANY (Limited).—Capital 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11. Shares, BRICE LAND AND MINING COMPANY (Limited).—Gairal 5000L; in 11.

wen, green, green, 50; J. Horsfall Walsden, cotton spinaler, vo., 1988, 1989,

FOREIGN MINES.

ST. JOHN BEL RRY MINING COMPANY (Limited).—Advices revived August 2, 1878, ex Minho (s.), dated Morro Velho, July 2:—GENERAL OPERATIONS—GOLD EXTRACTED TO DATE.—The produce for the cond division of June, a period of eleven days, amounts to 11,726 cits., equal 1066 cits per diem. It has been derived as follows:—

	Oits.		Tons.	. (Dits. per top
General mineral	7,829 0	from	1520	100	5-151
do Praia	1,135 5	**			4.269
Mineral free from killas	2,294.0	8.8	373	=	6.150
	11,258.5	12	2159	-	5.215
Retreatment	467.5		-	=	.216
			_		-
Total	11,726.0	*****	2159	=	5.431

Total 11,78-0 12,159 = 5-431

Equal to 1351-8169 ozs. troy = 2926 toz. troy per ton.

Advices received August 14, 1875, ex Tagus (s), dated Morro Velho, July 18:—
General Operatrions—The gold return for June, though low compared to previous mouths, may be considered as fair produce.

In the mine the extension of the "A "shoot 91 ft. 6 in. (now completed) has caused frequent interruptions in the regular working of the most productive stopes, especially 278 A and B, and to which is partly due the decline in the quality and quantity of the mineral raised. It may, however, be stated that no important monthly gold increase can be looked for, the -upply of water cassing over the establishment being at this season of the year considerably under that compared to former corresponding periods, owing to the unusual low rate of rainfall for the year 1877.

pared to former corresponding periods, owing to the unusual low rate of rainfall for the year 1877.

GOLD PRODUCE FOR THE MONTH OF JUNE.—The gold extracted during the above period amounts to 3,286.6 oits.—4028.7 ozs. troy. It has been derived as follows:—

Oits. Tons. Oits. per ton.

From general mineral	23,294 0	from	********	4259	=	5.469
" ditto Praia	8,238 3	**	*******	739	-	4.382
" mineral free from killas	7,117.0	33	*******	1087	-	6.547
	33,649 3			6085	rim	5.530
Retreatment	1,437.3	93	*******	_	=	0 269
Total	35,286'6	**		6085	200	5.799
- 4009,7169 over twom						

= 4028·7168 ozs. troy; '6820 oz. troy per ton.

The above produce is the result of 30 days' extraction, compared to 31 for May month. The staurping-mills through want of water have been worked at a lower rate of speed, the amount of mineral treated being less by 357 tons, equal to 2034 oits. The mineral freed from killas, owing to a less proportion of pure mineral, shows also a difference of 1-4 oits. per ton; all of which has tended to unfavourably

35,154·5 at 7s. 9d. per oit. — £13,622 7 43,

this year.

SUMP AND STOPES 278 A AND B.—The general condition of the mineral body in the sumpontinues as previously reported. The sinking rate is less due to the extension of the A shoot, the mouth's extraction of mineral being derived from the more westerly ground.

In future the supply of mineral from these sections will be on a reduced soils, the late recent additions of reserves being such as to admit of large raisings without unduly adding to the depth of the mine.

From the stopes the usual average amount of good mineral has been obtained. At 273 A the intravion of kills forming part of the south wall at a higher horizon has again been met with, which has reduced the area of pure mineral at this point.

OID.

LEVEL ABOVE SUMP AND EASTERN DRIVING are without change, the lode in oth places being contracted and poor. No further advance will be made with ness levels pending the removal of the intermediate ground forming part of the astern reserves.

eastern reserves.

WESTERN SECTIONS 255 A AND B.—The productiveness and dimensions of the above stopes show no falling off, the mineral body along its upper and lower parabeling quite as large as before reported. From this addition to the ore-bearing ground an important increase of mineral could be obtained, but until the competion of the work commenced this month for a more direct communication with the two beauting above 11 the 12 to 12 to 12 to 13 to 14 to 15 t of the work commenced this month for a more direct communication with the two hauling shafts little or no increased ben-fit can therefrom be derived. The work in hand is a cross-cut from the bottom of this stope towards B shaft, the sinking rate necessary to reach this horizon being estimated at about 10 months; also a level to be driven through sections 256 C and D from 257 C horizon.

By this arrangement direct communication between the east and west sections will be obtained, and analysis the communication between the east and west sections

obtained, and enable the passing through of the western min

will be obtained, and enable the passing through of the western mines.

A shaft when required.

At STOPE 234 B, and western driving, the same favourable indications continue, without any alteration in their general condition to note.

A CROSS-CUT.—The unwatering of the old mines by means of the tap is now complete, the one placed at the bottom of the end being also dry. The cross-cut is now being extended in that direction.

GOLD EXTRACTED TO DATE.—The produce for the first division of July, a period of eight days, amounts to 8936 cits.—1030-2 ozs. troy. It has been derived as follows:—

Olia.

One. Tons. Olts. per ton.—25048

General mineral	5,740·0 945·0	from	190	===	5.048 4.973 6.938
Mineral free from killas	1,921.8	23	277	=	
Retreatment	8,604.8	83	1604	=======================================	5·366 ·206
Total Equal to 1080.2675 ozs, troy = '6	8,936 8				5.572
Equal to 1030.2675 ozs. troy = '6. Ming.—The return for the first fortnight of June 1 oz follows	aly, emb	racing	g a per	ioi	of four

teen orking days, is as follows:

Mineral raised from the mine

Mineral quarried per borer per diem

2-06

Average daily attendance of borers

Average daily attendance of natives

No change to advise.

The following telegrams have been received:

On July 18.—" Produce for month (June) 35,000 oits.; yield, 5:8 oits per ton.

On July 18.—"Produce for month (June) 35,000 oits.; yield, 81 going on well."
On July 19.—"Produce eight days (first division of July), 9000 oits.; yield, 55 oits. per ton."
On July 28.—"Profit for the month (June), 6800%."
On July 31.—"Produce 11 days (second division of July), 12,250 oits,; yield, 90 oits, per ton. Duty of stamps short from short supply of water."

On per too DOI 1541 10 penses than t BAN month PIT.

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per ton. .; yield, .; yield, On Aug. 12 .- "Produce for the month (July), 35,000 oits.; yield, 5.7 oits.

On Aug. 12.—"Produce for the month (July), 35,000 oits.; yield, 5.7 oits. per ton."

DON PEDRO NORTH DEL REY (Gold).—Report for June: Produce from 1541-0 tons, dry weight, 1055 oits.—448. 7s. 6d.; cost, inc ading all general expenses, 211-34. 5s. 9d., "Telegram from Rio, dated Aug. 10, referring to a later date than the above report, advised 1750 oits. for the mouth of July.

SANTA BARBARA (Gold).—Aug. 15: The directors have not received the usual monthly despatches from Parl by the Southampton packet this week.

PITANGUI (Gold).—T. S. Treloar, Pitangue, July 15: During the past fort-night the adit had advanced apace, and that provided. Picarra continued as farourable for driving as hitherto, the jacotings or gold-bearing formation should be made with the shaft already commenced to be sunk from surface. When this communication is effected between the adit and this shaft it is intended to extend as shallow level in the drained jacotings 4 or 5 fathoms below the bottom of the old workings, with the view of discovering the gold veins ahead of the Ouro Podre gold vein, which latter should be the first vein to be met with, and was, according to tradition, left rich by the Brazilian proprietors when they were compelled to abandon their workings on the same, owing to the influx of the water. There is no apprehension of a flookan being met with in driving the adit, as no indication of such exists. The works pertaining to the wash-house for the Canoas were progessing satisfactorily, the roof being ready for tile, and the building nearly en closed with poles.

RICHMOND CONSOLIDATED.—Telegram from the mine at Eureka, Nevada;

of such exists. The works pertaining to the wish-house for the Canoas were progressing artisfactorily, the roof being ready for tile, and the building nearly en closed with poles.

RICHMOND CONSOLIDATED.—Telegram from the mine at Eureka, Nevada; Week's run, \$39,000, from \$30 tons of ore. Doré bars from refinery, \$4,7,000. Furnaces lost day various accidents; shut down for repairs 31st.

— R. Rickard, July 24: Since my last there is nothing new of importance either in the mine or smelting department. The drift from winze in the botton of the 200 is looking more favourable for producing ore, the end of the drift is in leige matter and timestone. The drift from No. 4 chamber towards No. 2 ch imber is not looking so well as it was. The No. 4 chamber is without much change, we are looking so well as it was. The No. 4 chamber is without much change, we now clearing out the ore around the cave on the eastern end of the stope. The western end is much failen off in value since last reported on. The No. 5 chamber is turn up out small quantities of fair grade ore. No. 9 chamber is very nearly worked out; there are still small streaks to come away, and of very good quality. The No. 7 chamber is somewhat improved, and turning out high-grade ore. The No. 10 is very much improved since my last, the ore is of good quality. The 400 is not in the providence of the contract is close. The 500 drift on fissure is in very favourable ground; it shows stones of galena and ledge matter in a seam in wide, the wall is regular and well defined. The 500 on quartite is without change. The winze sinking below the 500 on the fissure is in very good ground. The 600 vert is in hard ground, with oceasional pockets of red lime and irony matter. The rise above the 600 is progressing favourably. There is nothing new lin any other part of the mine.

BERHARDE AND AURORA.—Telegram from Capt. Drake: Ore in mine low grade, breaking daily 12 tons, shipping 25 tons: mine dumps, 100 tons; mill damp, 500 tons; milling, 43 tons; average avay, 335; estim ted

purput nextmonth. NEW QUEBILADA.—Advices from the mining superintendent to the end of fune report satisfactory progress. The ore produced for the month amounted $g \in G$ one, of which about 800 tons have been assayed, averaging $14 \times g$ per cent. Ret. Arrangements had been made for shipping two cargoes a month to the end of the present year, and ships have been, and are continued to be, chartered ac

cross year, and snups nave been, and are continued to be, chartered an emolicial production with the control of the control of

of shaft, to six men, at 17 marcs per metre; the lode is worth 10% per fathom. The masons are pushing on the building of the engine and crusher houses, and by the end of this week they will be ready to receive the roof. When this is put on we shall immediately commence to put in the engine and crusher. We are making excellent progress in dressing another parcel of copper ore for the market.

LUSTANIAN.—Ang. 7: Palhal Mine: The lode in the 200, east of Taylor's shaft, is 3ft wide, and worth 1½ ton of ore per fathom. In the 200, east of Taylor's shaft, the lode is 3½ ft. wide, and worth 2 tons of ore per fathom. The lode in the 190, east of Taylor's shaft, the lode is 5ft. wide, composed of stones of ore. In the 180, east of Taylor's shaft, the lode is 5ft. wide, and worth 1 ton of ore per fathom. The lode in the 150, west of slide lode, is 4ft wide, and worth 2 tons or ore per fathom, and is improving.—Stopes on Basto's Lode: The two stopes above the 200, east of Taylor's shaft, are worth 5 tons each for the month; the four stopes west of Taylor's shaft, above the 200, 6 tons each; and the stope east of Taylor's shaft, above the 200, 6 tons each; and the stope east of Taylor's shaft, above the 200, 6 tons each; and the stope east of Taylor's shaft, above the 200 of Taylor's.

PESIARENA UNITED.—August 7: District Val Toppa: Zero Level: In the

to the power of a given's matt, was most in out, when, and worms a tong one per per althoring, and is improving—Stopes on Basto's Loie, I he two atopses above the 200, east of Taylor's shaft, are worth 5 tons each for the month; the four oppose when of Taylor's shaft, above the 200, 6 tons each and the atope east of quantity of ore has decreased at the 200 of Taylor's.

PESIARENA UNITED—August 7: District Val Toppa; Zero Level; In the end south, on the caunter branch, there are veins of quantit throughout, but not to quantity of ore has decreased at the 200 of Taylor's.

PESIARENA UNITED—August 7: District Val Toppa; Zero Level; In the end south on the caunter branch, there are veins of quantit before the cause of the cause

wince, below the 60, there is a strong and well-defined lode, producing I ton per fathom.

Los Salidos: The lode in the 145, east of Taylor's, is easy for driving, and has again improved in value, now worth I ton per fathom. In the 130, east of Taylor's, the lode is disarranged and unproductive. The lode in the 120, east of Cox's, is strong and well defined, but less productive than it was, now yielding 1½ ton per fathom. In the 110, east of Son Miguel, the lode is small, and the granite getting very hard, valued at ½ ton per fathom. The 80, west of Palgrave's, is of no value at present. In the 80, east of Palgrave's, the lode has fallen off somewhat in value of late, now worth ½ ton per fathom. In Taylor's shaft, below the 145, the pitrana is fixing olstern and bearers, which retards the sinking for the present. In Swaffield's shaft, below the 55, the men are getting on well with the work. The lode in Boundary winze, below the 65, is divided into several unproductive branches. The usual quantity of one was returned in the past month, and the stopes are at present without any change of importance. The ordinary surface works are kept on very regularly, and the machinery is in good condition. We estimate the raisings for August (ive weeks) at 350 tons.

LINARES.—Aug. 7. The lode in the 120 cast of Santa Tomas, is large, with

turned in the past month, and the stopes are at present without any change of importance. The ordinary surface works are kept on very regularly, and the machinery is in good condition. We estimate the raisings for August (five weeks) at 350 tons.

LINARES.—Aug. 7: The lode in the 120, east of Santa Tomas, is large, with good stones of ore. In the 185, east of Santa Tomas, there is no improvement. The 135, west of Santa Tomas, continues unproductive. In the 100, east of Warne's, a great length of paying lode is being opened out, worth 1 ton per fathom. The lode in the 115, west of Warne's, is large, but does not contain any ore. In the 115, west of Warne's, is large, but does not contain any ore. In the lode in the 1215, east of Warne's, the lode is very wide and open, and lets out a large quantity of water; lode worth 1 ton per fathom. The lode in the 120, west of Peill's, is very strong and regular, yielding 2 tons per fathom. In the 90, west of Peill's, the lode is small, and of novalue. In the 224 winze below the 105, east of San Francisco, the lode is small, and of novalue. In the 224 winze below the 105, the men are making good progress; lode worth 1 ton per fathom. The lode in the 225 winze below the 90 is very small at present, valued at ½ ton per fathom. The weekly returns of ore were kept up very regularly during the past month, and there is no falling off in the stopes at present worthy of notice. The works at surface are kept on satisfactorily, and the machinery is in good condition. We estimate the raisings for August (five weeks) at 25 tons.—Quiniento Mine: In the 100, west of Taylor's, the lode is disarranged, small, and contains very good stones of ore. The 100, east of Taylor's, has also simproved in size and value. In the 90, east of Taylor's, the lode is disarranged, small, and unproductive. The lode in the 80, east of San Carlos, does not carry ore enough to value. The lode in Gomez winze, below the 90, is large and powerful, yielding good tumps of orce, worth ½ ton per fathom. The 100, east

Pascual's winze, below the 20, there is a promising and well-defined lode, yielding ½ too per fathom. Gigante's is a new winze, st uated east of 8an Victor engineshaft; the lode is worth ½ too per fathom. The weekly weighlings of ore were kept up very regularly during the past mouth, and many of the stopes are yielding fairly well at present. The ordinary surface works are kept on very steadily, and the machinery is in good condition. We estimate the raisings of ore for August at 200 tons.

PATELEY BRIDGE-GREAT DISCOVERY.-This wonderful discovery continues of the exceptional value of 10 tons of lead ore per fathom. The manager writes that "the lode (Rake vein) is increasresumed; the lode in the end has already changed, and looks very promising. This end is only a short distance from the rich ore body opening out in the 30 fm. level. As mentioned last week, every fathom driven on this extraordinary lode considerably increases the ore reserves the workings hairs extraordinary lode considerably increases the ore reserves, the workings being extended into unworked ground up to surface, 90 fms. Another important feature is the resuming of operations on the well-known Pringap vein. The manager says, "this is a most important point; the present end is very highly mineralised." No discovery equal to this in point of value has been made for many years, while it re-establishes the ancient reputation of the district—the oldest, and formerly the most famous, in Great Britain.

WEST PATELEY BRIDGE.—A further improvement is reported in the 20 east, on North Rake vein, now value 1 at 15 cwts. of lead ore per fathom. The 63 fm. level, on Craven Cross Vein, is opening out very savisfactorily; the stope in back of this level is worth 25 cwts. of lead ore per fathom. Grating and dressing of lead ore are being carried on as fast as possible.

PANDORA.—The directors have issued a circular completely refuting all the charges made in the one lately sent to the shareholders by Mr. James H. Crofts, and also expoing his mis-statements and the fallacy of his views. We have no doubt that the great majority will support the board, and show unmistakeably their confidence in its admission of the efficiency of the effic its administration of the affairs of the company.

NORTH TRESKERBY.—The hearing of a petition for the windingup of this mine was heard before the Vice-Warden of the Starnaries,
at the Prince's Hall, Truro, on Monday, when Mr. J. R. Paul appeared for the petitioner, Mr. G. S. Aroall, of Redruth, and Mr.
Marrack for the company. The petition was dismissed, with costs.
Mr. Arnall will, therefore, have to pay the costs on both sides.

Mr. Arnail will, therefore, have to pay the costs on both sides.

West Roskear.—The lode in Stephens's shaft, sinking below the 12 fm. level, is 10 ft, wide, impregnated with copper, lead, and blende throughout—a splendid looking lode. The agent writes:—

"If this lode does not result in a grand course of ore soon it will be the greatest disappointment I ever experienced in my life. I believe we are just on the top of it." This shaft is 40 fms. beyond the present end of the 24 fm. level, which is being driven by six men, at 3l. per fathom, and it is expected the shaft will be down to the 24 in about six weeks. About 64 fms. west of Stephens's shaft is another shaft (Lanyon's), sinking also below the 12 fm. level. Here also there is an exceedingly promising lode. Since June, 1877—although through inefficient pumping power operations have been chiefly confined to the 12 fm. level—the mine has sold 20 tons of silver-lead, at an average of over 20l. per ton; 174 tons of blende, and 102 tons of copper ore. A 66-in cylinder pumping-engine has, however, been recently erected and put to work, and with this and a 24-in. rotary engine for drawing and crushing, the mine is now amply provided with machinery.

LEAD MINING is looking up brightly in North Devon at the pre-

LEAD MINING is looking up brightly in North Devon at the present time. In addition to the mines now being worked in the Combmartin lead district, others are likely to be start-d there this summer. In the neighbourhood of North Molton the South Molton Consols and the new company, the North Molton Consols, are developing their setts, and a good thing may turn up any day, as they are working a recognised mineral district.

THE HAYDOCK COLLIERY EXPLOSION. -Mr. Driffield, the district County Coroner, and the jury who sat at the recent enquiry as to the d-ath, caused by the Haydock Colliery explosion, met at Wigan on County Coroner, and the jury who sat at the recent enquiry as to the d-ath, caused by the Haydock Colliery explosion, met at Wigan on Thur-day for the purpose of completing the formal enquiries. Mr. Chadwick and Mr. Harvey also attended. The verdict was signed as follows:—"That John Molyneux and 188 others, deceased, came to their deaths by an explosion of gas or fire-damp occuring on June 7 in the Wood Pits, Haydock, in the higher Florida seam beyond the red san-stone fault from the pits; but how ignited or by whom is not shown. That the said explosion was partly from a sudden issue or outburst from the Downhall-green fault, and partly from gas already lying in the goaf up to this fault, and of which gas so lying the fireman at least appears to have been previously aware, the last mentioned gas being possibly pushed out to some extent by a fall of roof in the said goaf, but the immediate cause of the explosion being, as they believe, the sudden issue or outburst first mentioned. That in their judgement the ventilation of this part of the mine has been faulty and defective, and they would recommend that a better plan of ventilation be now adopted in accordance with the views of the Inspectors of Mines. They approve the present use of safety-lamps and their locking, but note that the machine for locking seems to have been left too ready of access at times; and they would further urge that the fireman's report-book be entered up at each actual shift of work, and once at least each day, by the leading fireman for the mine. Also that encouragement be given to make these reports as full and communicative as possible."

NEGLECT AT A COLLIERY.—At the Swadlincote (Leicester-hire)

NEGLECT AT A COLLIERY.—At the Swadlincote (Leicester-bire)
Petty Sessions Thomas Millarship has been charged under the Mines
Regulation Act, 1872, with neglecting to provide sufficient ventilation to render noxious gases harmless, neglecting to provide proper means of signalling, and also neglecting to provide sufficient man-holes or places of refuge. The case was brought at the instance of Mr. T. Evans, Inspector of Mines for the Midland district. After hearing a great deal of evidence, the magistrates inflicted a fine of 10l. and costs for not providing sufficient ventilation, and 5l. and costs for not providing the necessary signalling. The third charge was dismisse

MINERAL OIL .- A despatch from New York says-The innumer MINERAL OIL.—A despatch from New York says—The innumer able European consumers of mineral oil, or American petroleum, will be glad to learn that a reaction has begun against the company which has monopolised the production and sale of petroleum. If this reaction should be successful there will be a great fall in the price of mineral oils, which has been kept up extravagantly for some years by artificial means. Consumers in Europe and America will profit by it; but the large retailers and grocers will be most satisfied, because they have been wrongly charged by their customers with selling at too high a rate what they are supposed to have purchased at a very low one. at a very low one.

LIGHT FROM GAS .- At the British Association the report on the best means of developing light from coal gas by Dr. Wallace, of Glasgow, was read by Dr. Wills, F.R.S. He approved the use of camel rather than common gas on account of its comparatively small influence on the atmosphere of apartments, and the smaller proportion of sulphur it contains. He also recommended that gas proportion of sulphur it contains. He also recommended that gas be formed at low pressure, and that district governors be used to ascertain the pressure at different levels in towns. He mentioned the fact that the average illuminating power of gas delivered by the Scotch companies was 26 candles, whereas in London it is only 16, and in the chief cities and towns of England and Ireland only 14. The use of globes round light reduced the quantity 10 per cent.

ECONOMISING FURL.-The invention of Mr. E. S. BIGG, of Blackheath, relates to improvements in fire boxes and tubes of steam boilers, and has for object the attaining of increased heating surface. It consists in forming or constructing the sides or the cirrace. It consists in forming or constructing the sides or the circumference of the fire box or tubes of plates or sheets of metal, having an undulated, corrugated, angulated, indented, zig-zaggged, or other like uneven or wavy surface, so that the water circulating or flowing in or around the spaces or recesses formed between the undulations, indentations, angles, or other like uneven surfaces shall receive a greater amount of heat from the fire than is at present obtained from plates, sheets, and tubes having plain, flat, or aren surfaces.

WATSON BROTHERS' MINING CIRCULAR.

Ten years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the Mining Journal, with the following announcement; which is now reproduced in conse-quence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the Journal on the Clementina

Mine.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1845, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1863), "Cornish Notes" (stress of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annuals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best piractical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating a mining.

WATSON BROTHERS,

MINEOWNERS, STOCK AND SHARE DEALERS, &c. 1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Mesers. WATSON BROTHERS to make their Circular now published in the Mining Journal more extensively known, and

to state—
That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash or for the usual fornightly stelement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any par Ucular mine for their clients, for the inspecting agent's fee of £2 2s.

LONDON EXPENSES.—The North Wales correspondent of the Journal observes, in reference to our remark that the local management of D'Eresby Mountain costs only 100/. a year, that it is no wonder, therefore, the agents tried to better themselves. We should explain that the three mines of D'Eresby Mountain, D'Eresby Consols, and Clementina form a group nearly under the eye of an agent, and Capt, Bennett received 14t. 14s. per month from them. The proportion of D'Eresby Mountain was 6t. 6s. per month, and Captain Roberts for occasional superintendence got 2t. 2s. per month, making a total for that one mine of 8t. 8s. per month.

PATELEY BRIDGE.—We have received several letters, communi-

PATELEY BRIDGE.—We have received several letters, communications, and enquiries this week, chiefly in relation to our remarks of July 27 (page 817). We then stated that if capital could be raised the shares would stand at a price more like their real value than they were then at, and the fine discovery on the Rake vein might soon enable dividends to be paid. We suggested also that, if the Articles of Association would admit of it, the 1000 shares held in reserve might be offered (at a price) as a bonus to present holders. We understood afterwards, however, that they could not, by the Articles, be sold under par, or 5l. each. The still further improvement in the Rake vein (since our remarks were written) has put shares up nearly to par, and they may be much higher, so that the shares up nearly to par, and they may be much higher, so that the directors may be able to issue the whole 1000 shares, if they require to do so at par. But, and this is a point to which one correspondent to do so, at par. But, and thus as point to which one correspondent particularly refers, so long as these shares hang over the market investors may hold back, and it would be as well to know at once what is to be done with them. The market would then right ities!, and probably advance. If the discovery be such that no issue at all is required so much the better, and the fact should be known at once. Having a good opinion of the mine, we recommended a great many shares originally at par and always regrested the decision of the shares originally at par, and always regretted the decision of the directors to keep 1000 in reserve, and commence working with what has proved to be an insufficient capital.

HYDRAULIC.—We do not pretend to be well up in waterworks, but no such plan was ever mooted or thought of for D'Eresby Consols as "making a lake or any other body of water lift two-thirds of its own bulk to a height of 40 ft above its own level," and a desultory conversation between two engineers after the meeting

was over was entirely misunderstood.

Monra Du.—We hope the bluestone, for which there is a good demand, will soon be reached. The delay in finding anything in the 90 south at Parys Mountain is vexatious, but we do not despair.—Since these remarks were written, the lode has been cut into at Morfa Du 4 ft., nearly solid bluestone, and no appearance yet of the wall of the lode. In a few days, therefore, we may hear of its size and value!

ABERLLYN. - No prospectus was issued; the whole working capital was subscribed without one. Particulars will be found in the Mining Journal of June 22.

D'ERESBY MOUNTAIN.—The old stope in No. 4, from which up wards of 2000 tons of leadstuff have been broken, ia now being continued south in whole ground to surface. We hope in a month to get the machinery at work and returning lead. A large water-wheel, stone-breaker, crusher, and other machinery have been erected,

wheel, stone-breaker, crusher, and other machinery have been erected, and taken more time than we expected. A reservoir of nearly four acres, for storing water, has also been in course of formation.

ABRLYN.—The great lode is now valued by the agent at 9 tons of blende per fathom.

NOTE.—If our readers will refer to the Mining Journal of June 16, 1877 (page 640), they will find a description of our first visit (with a director) to D'Eresby Mountain, as we referred to it last week. We there describe the works going on at Nos. 1, 2, and 3 levels into the hill, and add that the dressing-floors would be made "close to the mouth of a still deeper adit (No. 4), which will be cleared, driven, and made a tramway for the ores for the upper part of the mine." On the following week (see page 670) we wrote:—"In our remarks of last week we stated that an adit level, deeper than any yet explored by the present company, would be cleared up and made the tramway for the ores from the different levels above to the dressing-floors; and when on the mine we instructed the agents to clear up and examine it at once. This morning (Thursday) we have ing (Thui av) we have received reports from the agents (Capts. Roberts and Bennett), who have both been in the level, and find in one of the ends a lode 2 ft. wide, and worth \(\frac{1}{2} \) ton of lead per fathom." There seems, Capt. Roberts remarks, to be a "conglomeration of lodes in this deep adit;" and we added, "the discovery in this deep part of the mountain, so much below the levels described last week, is of great

PATELEY BRIDGE.—Since our remarks (as above) were written we have been informed, and of this we were not previously aware, that all the debentures for 5000l., which the directors were authat all the dependers for 5000h, which the directors were authorised to issue in order to raise money some time ago, have been taken up, and that the holders of these debentures have the option or call of the 1000 unissued shares at par—54 each. In June last a shareholder wrote to the Journal (see page 604) referring to a threat that unless the remaining debentures were taken up the

importance.

7½ to 8; Tankerville, 3½ to 4; D'Eresby Consols, 10 to 11; Clementina, 1½ to 1½; Rookhope, ½ to ½; Leadhills, 2½ to 3½; Carn Brea, 32½ to 35; Dolcoath, 25 to 27; South Condurrow, 11 to 11½; Tincroft, 7½ to 8½; Agar, 3½ to 4½; Grenville, 1½ to 2; Peevor, 6 to 6½; Richmond, 8½ to 9; Eberhardt, 4½ to 4½; Grenville, 1½ to 10, 10; Tillementina, 1½ to 1½; Carn Brea, 32½ to 85; Devon Great Consols, 2 to 2½; Dolcoath, 25 to 27; D'Eresby Mountain, 80 to 90; D'Eresby Consols, 10 to 11; East Van, 4½ to 4½; Great Laxey, 18½ to 19½; Leadhills, 2½ to 3½; Parys Mountain, 75; to 9s; Fratley Bridge, 4 to 5; Penstruthal, 8s. to 6s; Roman Gravels, 7½ to 8; Rockhope, ½ to ½; South Conurrow, 11 to 11½; South Frances, 3½ to 4½; Tankerville, 3½ to 4; Tincroft, 7½ to 8½; Van, 18 to 20; West Chiverton, 6½ to 7½; West Tolgus, 52 to 54; Agar, 3¾ to 4½; Grenville, 1½ to 2; Grogwinion, 2½ to 3; Wey Valley, 1½ to 2; West Wye Valley, 1½ to 2; Grogwinion, 2½ to 3; Wey Valley, 1½ to 9½; Fichmond, 8½ to 9½; Richmond, 8½ to 9½; Richmond, 8½ to 9½; Richmond, 8½ to 9½.

9% to 9%.

WEDNESDAY, Aug. 14.—There is little change in prices to-day. Pateley Bridge
firm at 4½ to 5½; Great Laxey, 18½ to 19; Yan, 18 to 20; Aberllyn, 10 to 11;
Rookhope 9t to 9; D'Erceby Mountain, 80 to 90; South Condurrow, 11 to 11½.
South Frances, 3½ to 4½; Peevor, 6 to 6½; Richmond, 8½ to 8½; Eberhardt,
4 to 4½.

4 to 4½.

THURSDAY, AUG. 15.—Market firm for Van, East Van, and Rookhope Lead shares. Pateley Bridge weaker. Van, 18½ to 19½; East Van, 5 to 5½; Rookhope Lead, 15s. to 17s. 6d.; Pateley Bridge, 15s. to 17s. 6d.; West Chiverton, 6 to 7; Leadhills, 2½ to 3; Roman Gravels, 7½ to 8; Tankerville, 3½ to 4; South Frances firm at 3¾ to 4½.

THE WEEK.

THE WEEK.

SATURDAY, Aug. 10.—Under the fear of money growing dearer, and the fact that the present account will be ended on Monday next, those who could close their accounts decently were very anxious to do so. It is now very clear that the making-up prices on Tuesday next will show a fall all round. Bears are now expecting rather a good time of it, and considering that Brighton A is 146, Dever A 129, Chatham Preference 27½, and District 65½, there seems a fair field for their labours. A sharp fall was recorded in Eberhardt shares. There being no buyers scarcely of the shares, a large order had to be done at 5½, or 1½ below yesterday. MONDAY.—The Bank rate was raised to 5 per cent., and Brighton A and Dover A receded 1 per cent. Turkish Bonds were very heavy; the Fives fell nearly 1 per cent. (13½ to 13½). The Treasury bonds were treated very unceremoniously. On Saturday they were quoted 27 to 29, but at the last, to-day, they were offered at 24. Eberhardt again showed great weakness, and could hardly be dealt in even at 4½. Richmond closed 8½ to 9.

Tuesday.—Heavy charges were made for continuing stock until next account.

Saturday they were quoted as the state of the continuing stock until next account. 24. Eberhardt again showed great weakness, and could hardly be dealt in every charges were made for continuing stock until next account. The per cent. was made on some Turkish descriptions, and thousands of Brighton A stock cost 54. There was an unchecked fail here of 2 per cent. The same onerous rate prevailed with Dover, A, and the fall in this over-rated stock was also 2 per cent. Brighton A closed at 143, and Dover A at 128. The fall extended to mines, and several of the foreign ones were exceedingly dull. Eberhardt was dealt in at 335, New Zealand Kapanga at 135, and Richmond at 836. Last account Turkish Treasury Bonds were continued at 3915, to-day it was 2345. WEDNESDAY.—Buyers only bid 834 for Richmond, and 334 for Eberhardt. Colorado shares were offered at 4, and Kapanga at 134. In railways, Chatham Preference fell 134, to 9534, owing to the dealers refusing to carry over large quantities of stock. The contango on Brighton A rose to 7s. 8d. Bombay Gas, 634 to 7; Brighton Aquarium, 9 to 935; General Credit, 634 to 7; Government Stock Investment, 14 to 15; Hudson Bay, 114 to 113; Lawe's Chemical, 734 to 83; National Discount, 1035 to 11; Oriental Gas, 734 to 735; Positive Assurance, 4s. to 85.

Grand Trunk of Canada are now quoted thus—First Preference, 4s. to 85.

National Discount, 10½ to 11; Oriental Gas, 7½ to 7½; Positive Assurance, 4s. to 8s.

Thursdax.—Grand Trunk of Canada are now quoted thus—First Preference, 44½ to 45; Second, 27½ to 28; Third, 13½ to 13½. By a circular issued yesterday the shareholders are invited to unite, so as to induce the board to abandon the through traffic, and develope the local traffic as much as possible. It is also suggested that a considerable revenue might be derived from hiring out the large surplus rolling stock now owned by the company. Richmond fluctuated somewhat. In the moraing they could be had in any quantity at 8½, but towards the finish sellers stood out for 9.

Fridax (Opening).—The markets are inclined to be flat. Brighton, A, and Chatham Preference are down 1 per cent. Unified has receded to 49. Turkish Fives are 13½ to 13½. Dover, A, alone is firm, and up to 128½. In mining shares East Van are quoted 5½ to 5½, and Pateley Bridge 3½ to 4½. Thus affording holders another chance of selling at good prices. Eberhardt, 4 to 4½. Richmond, 8½ to 9. Colorado, 3¼ to 4½.—Two o'Clock.—Lower prices have been reached. Dover, A, has lost the whole of the rise, and now shows a fall of ½ from last night. District have dropped to 60½, and Chatham Preference to 91½, thus revealing the character of their late noisy supporters. Turkish Fives can be got below 13. Hultaful, 3 to 3½. —Entry o'Clock.—A serious fall has taken place in Egyptian Unified, which undenly dropped from 48½ to 6½, but are now a little better; the Preference stock is down to 68. The following telegram has been received from the Richmond Mine:—"Flood. Town damaged. One water pipes cut. Running on deep well. Hope to save furnaces." The shares quickly fell from 8½ to 7½. Chapei House Colliery, 2½ to 3½. Cardiff and Swansea, 1½ to 1½. Newport Abercarn, 3½ to 4½. Great Western Colliery, 2½ to 2½6.

LEAD ERA MINING COMPANY-SPECIAL REPORT.

I herewith beg to hand you my report upon the prospects and merits of this highly interesting mineral property, and its geological position. It is situate in the millstone grit formation, overlay-ing the mountain limestone, the course of which bears nearly north and south through the two shires of Denbigh and Flint, and at Lead

cal position. It is situate in the millstone grit formation, overlaying the mountain limestone, the course of which bears nearly north and south through the two shires of Denbigh and Flint, and at Lead Era is de facto the same formation as proved so productive and profitable at Hendre Ucha, Gwern y-Mynydd, Vawnog, Cribiolyn, Bryn-Gwyn, Pwll-y-Wheel, Jamaica, and lastly East Pant-Du, the most recently established prize in the district. These mines, comprised as a whole, paid over a long series of years 70 per cent. annually on the aggregate capital. Lead Era possesses all the elements concentrated in its geological, geographical, and mineralogical character associated with all the miner referred to, and I am convinced that it will equally and probably surpass them in its ultimate yield of lead ore.

The company's concession is traversed by two true bearing beds, ranging from 3 to 1.5 fms. in thickness; these are termed the upper and lower flats. These beds are invariably productive whenever intersected by lodes, and of these there are five distinct and masterly lead-bearing veins entering the company's property from the west, while from the east the sett is the recipient of the adjacent Minera Mines, the dividends from which have been 608, 250., the difference of about 1,000,000. sterling having been expended in labour, merchandise, and royalites. Yet none of these lodes have been opened upon, hence their true worth has been hitherto unproven. The surrounding circumstances are, however, favourable to the formation of large deposits of ore at Lead Era. As a practical miner, and having studied especially the stratification, while drawing my inferences and deductions from results actually achieved in adjacent and adjoining miner, and having studied especially the stratification, while drawing my inferences and deductions from results actually achieved in adjacent and adjoining miner, and having studied especially the stratification of the lodes and dawnon to practically, in the summary of the strating than the summ

PANT-Y-MWYN, MOLD.—This successful young lead mine has just declared another dividend of 2s. per share out of the profits derived from the ores sales. The previous dividend in February was only 1s. per share. The balance-sheet has just been issued, and was only 1s. per share. The balance-sheet has just been issued, and reflects great credit on the executive. The mine continues to open out unprecedentedly rich. In the 130 yard level, which is the deepest point reached, a course of ore has recently been intersected 6 ft. solid; some specimens taken promiscuously from this discovery have been analysed by Prof. Hessel, the celebrated analyst and mineralogist, and he states they contain 78 5 per cent. of pure metallic lead; he has compared the samples with a number of others, and finds they are somewhat similar to the ores of the celebrated Stolberg Mine, which obtained the prize in the last great French exhibition. The last sale realised 121. per ton, and on the 9th inst. more than 100 tons of this rich quality ore was ready for sale, and has been gained at a cost of about 4001.

a shareholder wrote to the Journal (see page 604) referring to a threat that unless the remaining debentures were taken up to mine would be seized by those who had already advanced money or debentures, and no doubt this had the effect of bringing down the shares to a few shillings each, and it may also have had the effect of getting off the debentures.

BATURDAY, AUG. 11.—Market quiet. Van, Rockhope, and Pateley Bridge, 3 to 4; Baturday, Aug. 11.—Market quiet. Van, Rockhope, and Pateley Bridge, 3 to 4; Presby Mountain, 80 to 90; D'Eresby Consols, 10 to 11; Leadhills, 2½ to 3; South Condurrow, 11 to 11½; South Frances, 3½ to 4; West Tolgus, 52 to b4; Richmond, 8¾ to 9¾.

MOSDAY, AUG. 13.—Van and Pateley Bridge shares have been again in demand; Eberhardt weaker. Van, 18 to 20: Pateley Bridge, 4 to 5; Aberllyn, 16, 45,000. To Bombay. We have received during the week 23,000. from the West Indies, although the Padito steamer has been placed. The demand has been mand; Eberhardt weaker. Van, 18 to 20: Pateley Bridge, 4 to 5; Aberllyn, 16, 600. To Bombay. We have received during the week 23,000. from the West Indies, although the Padito steamer has been placed. The demand has been principally for the Continents, although the Padito steamer has been placed. The demand has been principally for the Continents, although the Padito. from the Padito.

Mining Correspondence.

BRITISH MINES.

BRITISH MINES.

ABERLLYN.—John Roberts, August 13: We have commenced to open on the blende on the great Gorse lode, which is looking well; it is 12 ft. wide, and worth 9 tons of blende to the fathom. We are engaged at the deep level about the transway, which we shall get in as soon as possible. We have now cleared and second about 70 fathoms of this level, and made it ready to take the rails. I should a smark that in clearing the middle or No. 2 addit we have discovered that the old men have driven a cross-cut into the mountain west over 50 fathoms, and the end appears to be near a lode. I was going to recommend the driving of a cross-cut in that direction at that level, but now so much has been done towards it it will be no great cost to cut some of the lode of D'Eresby Consols Mine. We are getting on very well with the building of the smithy.

BEDFORD UNITED.—R. Goldsworthy, W. Phillips, Aug. 15: Good progress has been made in sinking the engine-shaft below the 138, where the lode is worth 160. Per fathom, one stope in the back of the 138 east since last report. The lode in the 137 cast is worth for copper ore and mundio 72, per fathom. One stope in the back of the 138 east, and one in the back of the 138 west, are each worth 81, per fathom. The machinery is in good order and working well.

BLAEN CAELAN.—J. Pell, Aug. 15: The engine-shaft is sunk 10 fms. 4 ft. below the 20: the ground continues hard for sinking. In two or three weeks we can cross cut to the lode 2 fms. to the north, and I feel confident we shall intersect the lode rich at this depth. The 30, driving west from the bottom of the winze, is driven 5 fms. in a teautiful lode, letting out a good deal more water, the rook very hard, and worth for lead 25. per fathom. The 30 east is driven 4 fms. 5 ft.; the lode is very fine, containing branches of spar mixed with copper and sulphur, and worth 20%, per fathom for lead. The rise from the deep adit level to the 10 intermediate level being complete, we have now cleared away the stuff from the level, and

equally as good as it has been previously. I shall have another good pile of ore drawn from here to morrow. All points are being urged on with speed. Setting report next week.

CARON.—John Kitto, Aug. 12: I have nothing particularly new to report to you from underground. We have fixed the new lift of pumps in the new engine-shalt, and are quite ready to resume the sinking of same for a deeper level as soon as the machinery is completed and set to work. The masons are now building the small wheel-pit, and will have it finished in about ten days from this date, and think in a month from then we shall be ready to commence crushing and dressing, as well as pumping and drawing with the new machinery. All the heavy parts have been fixed, and we are now getting on with the lighter portions as quickly as possible, and no time shall be lost in getting it all to work. I may add that it is altogether a splendid lot of machinery, and when completed will be in every respect quite equal to new.

COMBMARTIN.—T. Harris, T. Comer, Aug. 10: We have to-day re-set the Is to drive east by four men, at 41. 10s. per fathom the month; the lode is large, of from 4 to 5 ft. wide, composed of veins of quartz, mundic, with strings of lead and blende, and has a very kindly appearance. The adit cross-cut to drive north by four men, at 41. 5s. per fathom the month; the killas is of a laminated kind, with veins of mundle intervening of from 1 to 2 in. thick, thus showing the country to be highly mineralised, and encouraging for future productiveness.

CWM DWYFOR.—John Ridge, Aug. 15: Morgan's shaft is sunk 1 fm. 1 ft. 6in. since we commenced, making the total depth from the surface 14 fms. 4 ft. 6 in. The lode is 4 ft. wide, composed of slate, spar, carbonate of lime, and a little lead ore, but not sufficient to value. The lode is getting stronger as depth is attained, which is a favourable indication for the 20, which it is intended to drive as t under the ore seen in the bottom of the 10. The water is not quite so strong as expected to find

under the ore seen in the bottom of the 10. The water is not quite so strong as I expected to find it, and unless it increases very much we shall get the 8 fm. level by the 21st of next month.

CWMYSTWITH.—Aug. 14: The lode in Gill's upper level, driving east, still continues small and poor, and if it does not improve before Saturday, our setting day, we purpose removing the men to drive the same level west to prove the lode in that direction, as there is a pipe of ore gone down in the level above (Michell's in advance of the present end. The lode in the winze sinking below Gill's upper level is 2 ft. wide, worth 15 cwts. of lead ore per fathom for the length of winze-9 ft. In the winze sinking below the 25, over Level Fawr, on Kingside lode and branches, the lode is 4 ft. wide, worth 12 cwts. of lead ore per fathom. In Michel's cross-cut, driving north, we have crossed several small branches during the last cortainty, containing some nice spots of lead, blende, and copper ore; this indicates that we are not far from the lode. The lode in the stope over Gill's upper level, east of the winze, is 3 ft. wide, worth 1 to nper fathom. In the three stope over Michell's level, on the new lode, the lode is worth 15 cwts. of lead ore per fathom each. The lode in the stope in the bottom of the intermediate level is ft. wide, worth 14 cwts. of lead ore per fathom for the width of the lode. The lode in the taree pitches over and under Level Fawr, on Kingside lode and branches, is wide, and produces 14 cwts. of lead ore per fathom respectively, and men getting wages. Bince the last report we have set three pitches, to eight men, on Kingside lode and branches, over and under Level Fawr, at 8. per ton; we are pleased to say some of them have already improved since they began. DE BROKE.—J. Phillips, Aug. 14: Wilson's shaft is nearly 9 fms. below the 5 cm; we are pleased to say some of them have already improved since they began. DE BROKE.—J. Phillips, Aug. 14: Wilson's shaft is nearly 9 fms. below the form in the 45 cast, the

ing for next sampling, and I hope by Saturday next to have a considerable quantity of lead ore prepared towards the usual sale of 20 tons. The machinery is in excellent order.

D'ERESBY CONSOLS,—John Roberts, Wm. Sandoe, Aug. 14: The tramway in deep adit is completed, and the men are busily engaged, in tramming out the stuff fallen down from the shaft, which we expect to complete by the end of the week; and then we shall commence directly driving with a full pare towards the cobbler's lode. The other points of operation are without change since our last report. The end on Owen's lode is hard, and the lode pinched; there is a nice leader of blende on the footwall, and letting out water. The end driving sould not not Gorse heading has a little better ground for driving, and better progress is being made; the lode, however, is pinched rather small, that is to say, the ore-bearing part of it, but we expect with a still more favourable change in the ground that the lode will improve also.

D'ERESBY MOUNTAIN.—J. Roberts, Wm. Sandoe, Aug. 14: The lode in No. 1 is looking very much better than it was last week; the ore-bearing part is now 15 in., with splendid stones of lead and good blende. The No. 3 end is not producing so much lead, but much more blende—a very pretty looking lode. The stope in No. 4 is without any change since last week; we may remark again that this end of the stope is all in whole ground from surface to the No. 4 level, and the south boundary. No. 5 is about cleared up to No. 3 shaft. We are making good progress with the reservoirs, and also with other surface work.

DERWENT.—John Morpeth, August 15: I beg again to report to you a few particulars on these mines.—Jeffries Shaft: Middle Vein: The 95 cast is hard. The vein where we are stripping it down in this level a few fathoms back from the present end, and also No. 1 stope, is looking very well, its worth beling 1½ ton of ore per fathorm. No. 2 stope produces 16 cwts.; No. 3, 22 cwts; No. 4, 22 cwts; and No. 5, 20 cwts. The 93 west is poor, and

of ore per fathom. No. 2 stope produces 16 cwis.; No. 3, 12 cwts.; No. 4, 22 cwts. and No. 5, 20 cwts. The 93 west is poor, and the same remark also applies to No. 1 stope in the back. The other three stopes in the back of this level yield 10, 14, and 12 cwts. each respectively per fathom.—Bun Vein The 70 cast yield 14 cwts. per fathom, and the stope in the back 15 cwts. The stope west of shaft, over the same level, yields 8 cwts. lead per fathom; vein wider and casier to shift than for some time past. The stopes at the 40 is now nearly cut through, and the men will be available either to commence to drive eastwards at the extreme point of the 40, or to start upon ore, as the board may determine. Westgarth's Shaft: Middle Vein: The 93 cast the day before yesterday cut into a large open flat at the roof of the level, into which we can see forward some 5 or 10 ft., where there is a vast quantity of quartz, spar, with balls of solid lead ore. This flat will enable us to push the level at little quicker. The siding in this level for boring machine will be shortly completed; the veins here looks promising for good backs. The stopes over the 74, west of shaft, are yielding 10 and 16 cwts. per fathom respectively. Drawing and dressing at full work.

EAST CRAVEN MOOR.—D. Williams, August 15: In the cross-out south from the end of the 55 west we have not reached the south wall of the parallel vein, but hope to do in the course of a few days, as the water is coming out of the end more freely during the last day or two. The new shaft from surface is down 4 goassa and lead ore, worth 10 cwts. per fathom, and promising for an early improvement. In the 30 west, upon Hardgate end vein, the lode in back of level is 2 ft. wide, and producing awing work for dressing. No other change to notice this week.

EAST DARREN.—Aug. 14: The cross cut at the 92 cast has been driven during the past month 1 fm. 4ft. in hard ground for exploring. In the present forchereat we have intersected a branch of lead ore, worth in the sole of the cross

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n during ent fore-cross-out has been at ill the sg under n value, I tribute Our ma-d supply

EAST VAN.—Wm. Williams, Aug. 14: We have driven the 70 cross-cut south 16ft. We cut a few spots of lead this morning in the end, but not sufficient to telegram about. Now five o clock, and a few shots in the face of the lode has shown it to be intermixed with biende and nice spots of lead. The water begins to issue from the end. We shall see more of it by to-morrow morning, when I shall send you a telegram in time for the board. Copy of telegram: Aug. 15 (1.15 pm.): Driven 19ft., of which 2 ft. 6in. in lode; forebreast now in strong blende and spots of lead; best chance 2 fms. ahead.

GAWTON COPPER.—George Rowe, George Rowe, jun., August 10: The ground in the 117 cast is improving for progress, and the lode making large, with spots of mundic and ore. The lode in the winze sinking below the 105 is worth 124. per fathom. The lode in the stope in the back of the 105 is worth 124. per fathom. The part of the lode carried in the winze sinking below the 95 cast is 6 ft. "wide, worth 94. per fathom. All other operations are without change. GLENROY.—R. Rowe, Aug. 14: The water is now forked down 4 fms. below the 50, and everything is going on right. We had a length of levels to drain at the 50, and shall have the same to deal with at the 60; but below that level there is not much open ground beyond the shaft, and once under the 60 the mine will soon be clear.

the 50, and shall have the same to deal with at the 60; but below that level unere is not much open ground beyond the shaft, and once under the 60 the mine will soon be clear.

GOGINAN.—Aug. 14: The lode in the pitch over the 130, east and west of western shaft, is producing from 12 to 16 cwts. of ore per fathom. The pitch over the 120, 35 fms. west of Bryn Pica shaft, yields 18 cwts. to 1 ton of ore per fm. The lode in the pitch over and below the same level, 65 fms, west of Bryn Pica shaft, is worth 12 to 15 cwts. of ore per fathom. In the pitch over the same level, 12 fms. east of western shaft, the lode will yield 11 cwts. of ore per fathom. In the three pitches over the 100 the lode will produce from 10 to 14 cwts. of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. The story of the company of the cwts. Of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. The story of the cwts. Of ore per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. In the three per fathom. The two pitches over the 60 are worth at present 11 cwts. of ore per fathom. In the three high per fathom. The fathom the cwts. Of ore per fathom. The fathom the fathom the single per fathom. In the per fathom the open cwts. Of the general meeting 12 cwts. Of the general meeting 12: The pround in the cross-cut east from the boundary shaft is easier for driving than when last reported on, consequence of the general meeting. There is still very good ore in the deep adit level on the fathom the shaft.

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THE MINING JOURNAL.

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WHEAL UNY.—Wm. Rich, M. Rogers, Aug. 13: The shaftmen are casing and dividing Hind's shaft, and preparing to fix skip road below the 169. The 160 end west is worth 71. per fathom. The 160 east is looking very promising, and carries a little tin. The 150 end west is worth 81. per fathom. A rise in the back of this level is worth 101. per fathom. The 160 end east is worth 71. per fathom. The 180 end east is worth 71. per fathom. The 180 end east is worth 91. per fathom. The 180 east is worth 71. per fathom. The 180 east is worth 72. per fathom. The 180 east is worth 74. per fathom. The 180 east is worth 75. per fathom. The 180 east is worth 76. per fathom. The 180 east is worth 76. per fathom. The 180 east is worth 77. per fathom. WYE VALLEY.—John Kitto, August 10? The winze sinking below the 23 is down about 12 fms., and is still in a capital lode of lead, particularly in each end, but the water is still quick and very troublesome, and comparatively little progress can be made in consequence. The 45 draing east from the engine-shaft is looking very kindly, and the lode is yielding strong spots of lead and blende, and letting out water very freely, so much so that we are duly expecting to drain the winze referred to above. The same remarks apply to the 22 east. The lode here also is very strong, and yielding good spots of ore, and a great deal of water is issuing therefrom. This end is now very near the run of orey ground at Tippett's shaft, and we may reasonably anticipate a further improvement shortly. We have

TO THE METAL TRADE.

TOR COPPER, TIN, LEAD, &c., apply to-MESSRS. PELLY, BOYLE, AND CO., SWORN METAL BROKERS, ALLHALLOWS CHAMBERS, LOMBARD STREET, LONDON. (ESTABLISHED 1849.)

The Mining Market: Prices of Metals, Ores, &c.

	•
METAI	MARKET-London, Aug. 16, 1878.
IRON. & s. d. & s. d	TIN. £ s. d. £ s. d.
Pig; GMB, f.o.b., Clyde 2 9 3	English, ingot, f.o.b 64 0 0
1. Scotch, all No. 1 2 9 6- 3 10 0	, bars ,, 65 0 0
Bars, Welsh, f.o.b. Wales 5 26-5 50	refined 67 0 0
in London. 5 15 0	Australian 60 0 0
Btafford., 6 15 0- 7 10 0	Banca 62 0 0
, in Type or Tees 5 5 0- 5 10 0	Straits 60 0 0 -
. Swedish, London 9 0 0- 9 10 0	COPPER.
Rails, Welsh, at works 4 15 0- 5 0 0	
Sheets, Staff., in London 8 5 0	Tough cake and ingot. 66 10 0- 67 10 0
Plates, ship., in London 6 15 0- 6 17 6	Best selected 68 0 0- 68 10 0
Hoops, Staff 7 10 0	Sheets and sheathing. 72 0 0-
Mail rods, Staff. in Lon. 6 2 6- 6 15 0	Fiat Bottoms 75 0 0
	Wallaroo 71 0 0- (nom.)
STEEL.	Burra, or P.O.O 70 0 0
English, spring	Other brands 64 0 0- 66 0 0
,, cast30 0 0-40 0 0	Chili bars, g.o.b 60 15 0
Bwedish, keg14 0 0	PHOSPHOR BRONZE.
4. fag. ham15 0 0	Bearing metal £112 0 0
LEAD.	Other alloys £120 0 0-140 0 0
English, pig, common 16 10 0-16 12 6	Other anoys 2120 0 0- 140 0 (
L.B16 15 0-16 17 6	Brass.
. W.B17 0 0-17 5 0	Wire 7½d 8d.
sheet and bar17 10 0	Tubes 714
pipe18 0 0	Sheets 8¼ - 8¾
red19 0 0	Yel, met, sheath. & sheets, 6 - 7
white24 5 0-26 0 0	
patent shot21 0 0	Nails composition 814 - 9
Spanish	TIN-PLATES.* per box.
NICKEL,	Charcoal, 1st quality 1 0 0- 1 2
Metal, per cwt18 0 0-20 0 0	
Ore, 10 per cent. per ton.24 0 0-26 0 0	
QUICKSILVER.	
Flasks of 75 lbs., ware, 7 0 0-	2nd quality 0 14 6- 0 16
SPELTER.	Blackper ton 16 0 0- 16 10
	Canada, Staff. or Gla., 11 10 0- 12 0
Bileslan 18 0 0- —	
English, Swansea 18 0 0-	Black Taggers, 450 of 30 0 0
Bheet zinc 21 10 0- 22 10 0	14 × 10
* At the works, is, to is, 6d, per box	t less for ordinary . 10s per ton less for

Cauada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

been lost to this country simply on account of price; the foreign competition has proved too much forus, and we are still undersold; and although this is so thoroughly well known, yet there are some amongst us who are madly endeavouring to establish higher rates, and if they succeeded what would be the result but a still greater loss of trade to the country. No, instead of higher prices there must be important of the prices, unless foreign prices advance above ours, and even then we should be lower prices, unless foreign prices advance above ours, and even then we should be unwise to move too houriedly and without having first secured a fair share of work. The foreign houses have been cutting us out of a large number of orders, and it is to be hoped that it will soon be our turn to cut them out. One thing is very certain, however, if we want to restore British commerce it can only be accomplished by our being a unbject for us to finish on the present occasion, we are the-efore, reluctantly comp-lied to defer it together with the question of prices is too large a subject for us to finish on the present occasion, we are the-efore, reluctantly comp-lied to defer it together with the question of stocks and demand for future comment.

IRON.—Whatever effect dear money may have upon other staple commodities, we know from past experience that it always makes a bad impression upon the prices of iron, especially upon pig-iron,

and more particularly upon Scotch pig-iron, because hitherto that has been the great medium of speculation, and speculators are generally distinctioned to operate or to carry over when they are subject in the presence of the control of the contro

and appendantor, or the ironmaster, or special and the merchant will be entirely shut up. If any alteration is made in quotations it should be a reduction, as that might help to simulate the demand, and there there would be some sense in an effort of that sort.

The iron trade has been partly lost, and every endeavour should be used to recover it, and nothing allowed to hinder it. As it is, it will be no easy matter to accomplish, and many despair of ever getting it back again; but certainly the most effectual way to stifle it altogether will be to raise prices just when a chance of some increased demand might possibly spring up. In the aurumn generally a few orders are placed for shipment before the close of the navigation of the northern ports; but if higher prices are demanded buyers will execute their orders on the Continent, to the prejudice of the English ironmaster; but this must not be, and if speculators cannot keep within bounds they must be expelled. The market must not suffer any undue interference, otherwise the interests of masters will be jeopardised, and the workmen will lose their share of employment. The men have had a hard time of it, and it would be the greatest unkindness to do anything to prevent them from picking up a little before the winter sets in. For their sakes alone every facility and every advantage ought to be displayed towards buyers to induce them to buy freely. Unanimity should exist between masters and men, and there should be but one feeling animating both parties—that of promoting the expansion and development of the trade. Speculative business should not be entertained to the exclusion or in preference to legitimate requirements, even though it have a larger profit. Great care will be necessary in the selection of orders, and it would be as well to make a difference between regular and occasional customers. Before we close our article we wish it to be understood that there is no desire to stamp out the speculator, as he is very useful—we were just about to say a necessary

in itself must cause sellers sooner or later to make a reduction in their quotations. No. 3 ir quoted at 39s, and No. 4 at 38s., though in many cases makers ask 6d., and is. per ton more, and it is said that they have even gone so far in many in stances as to refuse orders unless they have been able to realise the higher price. The whole of the manufactured trade beeps dult; perhaps plates may form a slight exception, for which it is stated a fair demand exists at 6d. 5s. per to, though some fair orders makers have undertaken to accept on somewhat easier terms.

though some fair orders makers have undertaken to accept on somewhat easier terms.

From Barrow-in-Furness it is stated that the trade is not of so cheerful a character, orders being particularly scarce for prompt delivery. One third of the furnaces are said to be out of blast, and the requirements of buyers being but limited, there is but comparatively little business transacted. There is but little alteration in prices, quotations keeping steady. The best description of Irish ore realised 9s. 6d. per ton, while the inferior qualities are quoted at 7s. 6d. But little alteration is reported to have taken place on the continental markets, and prices keep as last quoted. The demand for Scotch iron is said by the mail from New York of the 3rd instant to be but moderate in that country, Ooltness being quoted from \$23 to \$23 5) c., and Eglinton \$21 to \$21 50c. But a limited demand exists for scrap, which is quoted at—for No. 1 wrought, \$20 to \$21 from yard, and east \$12 to \$15, business being very dull. Rails are in fair request at \$32 to \$36, and \$12 to \$15 to \$15. The market for manufactured keep quiet, and although prices show little or no change they remain comparatively steady. In spite of all the reports of the failing off in the trade the most reliable returns of production show that in 1877 2, 124, 731 tons of iron and steel were rolled in the United States, against 1, 936, 130 tons the year when the panic fell upon the country, again of 188, 801 tons. The imports of bar iron into New York from Jan. 1 to July 31, 1878, were 485 tons, as compared with 2295 tons in the corresponding period of 1877, and 7541 tons of pig, against 10, 405 tons. The warrant market of Glasgow, which was reported dull, but steady, last week, has receded about 9d, per ton. This week the market opened at 49s. 10½d., but gradually receded to 49s. 4½d., with our markets now closing at 49s. 3d., and with a downward tendency.

osing at 498, 30., and with a downward tendency.	
For the week ending Aug. 11, 1877	7,321 5,993
Decrease Total decrease for 1878	1,328 46,454
Imports of Middleaborough pig-iron into Grangemouth: For the week ending Aug. 10, 1878 For the week ending Aug. 11, 1877 Tons	
Increase Total increase for 1878 FURNACES.	
In blast Aug. 11, 1877	

THE IRON TRADR.—(Griffiths's Weekly Report).—Friday evening, The glasgow market has been dull, and prices have had a dropping tendency all the week. To day the market has been inanimate, but closes this evening firmer, with buyers at 49s. 3½d., about 6d. lower than the price last week. The stock in Connal's stores, which is increasing at the rate of 300 tons a day, stood this morning at 190,496 tons. Makers' iron in several cases has been reduced 6d. per ten. We quote No. I Gartsherrie, 57s.; Coltness, 6b., 6d.; Calder, 57s. 6d.; Langlons, 57s., 6d.; Summeriee, 55s.; Monkand, 50s., 6d., f.o.b. Glasgow; Glengarneck, 55s., 6d.; Eglington, 50s., f.o.b. Ardrossan; Shotts, 57s., 6d.; A., 5b., b., 55s., 6d.; Eglington, 50s., f.o.b. Ardrossan; Shotts, 57s., 6d., f.o.b. Leith. The improved feeling reported in the trade last week is more pronounced, and atthough the volume of orders for finished iron is not what might have been expected, still foreign merchants being now satisfied that prices will not go lower, are gradually giving out the orders which have so long been in abeyance. The smelters in all districts are firm to late prices, and few houses would fed disposed to take large contracts, but prefer dealing with their regular customers to supply the legitimate demands of old manufacturers. The demand for steel rills has increased; enquires for this kind are numerous, and several moderately large contracts have been placed this week in 8heffield and Monmoutlishire. No change in tin plates; the same ruinous prices are still submitted to by the Welsh makers for I C coke. On the other hand, charcoal plates are better, with considerably wire are busy on specialties for which these famous works are so well adapted. In the metals, both tin and copper are lower. Straits tin is 6v. 10s.; Australian, 60v.; Corrish refined, 60v. Australian copper is 10s. and English 20s. lower than last week. Spelter is weaker. THE IRON TRADE. - (Griffiths's Weekly Report). - Friday evening.

nne, against 4300 tons Aug. 15, 1877.

Messrs. FRY. JAMES, and GO.—COPPER continues to be in very limited demand, and prices have again become lower in consequence. It is difficult to arrive at the cause of this depression with precision, but the general prevalence of holidays is mostly accepted as contributing to it in a great degree. —Hen is for the morart still uninterruptedly depressed. —Thy: The heaviness and decline in values noted in our last have not been relieved, and prices are again lower. —Spensells slowly, although the importers are accepting lower rates. —LEAD continues depressed. —Thy Plates are without change.

The Mining Share Market has shown greater activity this week, and one or two mines have advanced in price. The sudden demand for particular shares has shown the impossibility of getting them at the low quotations which have been ruling of late; and thus any good discovery would set the market flying with a general rise in prices. The settlement of the fortnightly account has occupied the chief attention of the dealers.

TIN MINES show no particular change, and there is no business

pied the chief attention of the dealers.

TIN MINES show no particular change, and there is no business doing in them. The Mining Institute of Cornwall gives the aggregate returns of 23 tin mines in Cornwall for the month of July at 922 tons 6 cwts. Of these mines only three are worked to a profit; the others at the very serious loss of many thousands of pounds per month. There is, however, the singular omission of Wheal Peevor from the list. Dolcoath shares are quoted 25 to 27; Carn Brea, 32½ to 35; Cook's Kitchen, 15s. to 20s. East Pool, 9 to 9½; at the meeting here the accounts for three months, charging labour cost to Aug. 5 and merchant's bills to end of May, showed a profit of 2028,

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The tin sold realised 3621*l*; tinstone, 757*l*; arsenic, 370*l*. Penstruthal, 3., to 5s.; South Cundurrow, 11 to $11\frac{1}{2}$; South Frances, $3\frac{1}{4}$ to $4\frac{1}{6}$; Wheal Agar, 4 to $4\frac{1}{4}$; Wheal Grenville, 2 to $2\frac{1}{4}$; Wheal Peror, 6 to $6\frac{1}{2}$.

The tin sold realised 36211.; tinstone, 7571.; arsenic, 3701. Penstrutbal, 3s. to 5s.; South Candurrow, 11 to 11½; South Frances, \$\frac{1}{2}\$ \text{ to 4}\$; Wheal Agar, 4 to 4½; Wheal Genville, 2 to 2½; Wheal Perfor, 6 to 6½.

COPPER MINES show no particular change since our last, and there is nothing doing in shares. Devon Great Consols, 2½ to 2½; West Tolgus, 62½ to 55. West Scton, 8 to 10; at the meeting the accounts for four months showed a loss of 16354, and a debit balance of 14482. The copper ores sold realised 20941.; 72 tons of black tin, 24554. The costs were 63684. The liabilities of the mine were said to be 40000. No call was made. Since the last meeting 12 additional heads had been added to the stamps, which would enable them to increase the returns. The lode in the bottom of Mitchell's shaft, 6 fms. below the 165, is 8 ft. wide, worth 1 ton of copper ore per fathom, and good stones of tin. Parys Mountain, 6s to 8s. Morfa Du, 12s, 6d. to 17s. 6d.; the lode has been cut into here 4 feet, and no wall yet, showing that it may be of great size. The forebreast is full of bluestone of a rich quality.

Lead Minks have been firmer, and in more demand, especially Pateley Bridge shares, which a few weeks ago were at 15s, and have now reached 4½, through the discovery, which is a very important one. The low quotations of Van shares also brought in a few buyers. Rookhope shares have also been in request at an advance. Van shares are firmer at 18½ to 19½. East Van shares have advanced, in anticipation of cutting the lode, to 5½ to 5½. The crosscut at the 70 has been driven south 16 feet, and a few shots in the face of the lode have shown it to be intermixed with blende and spots of lead. Roman Gravel shares 7½ to 8; the sampling for the month is 180 tons of lead and 20 tons of blende, and the agent remarks that the mine never looked better than it does to-day. Great Laxy, 18½ to 19½. Pateley Bridge, 4 to 5; the course of ore in the 30, west of Rake vein, still holds worth 10 tons of lead ore per fathom. The s

del Rey, 265 to 275.

The Market for Mine Shares on the Stock Exchange maintains the improvement noticed last week, and it is now considerably more easy to transact business at quotations. The dealings to-day include Cape Copper at 30½; Eberhardt and Aurora at 4½; Richmond at various prices from % down to 7½; and United Mexican at 3 9-16ths. In British mines not a single transaction was recorded.

The report of the Royal Commission appointed to enquire into the constitution, rules, and practices of the London Stock Exchange, recommends the incorporation of the body, and amongst numerous suggestions for its better administration it is proposed that all dealings before allotment, whether in foreign loans or in the shares of new companies, shall be prohibited by law. That a very sweeping reform is necessary is acknowledged by the more respectable members of the Exchange, and the report admits that internal efforts have been made to purify the body, which, as a whole, is unquestimably honourable, since it is well known that buying and selling to the extent of millions sterling are effected upon mere parole engagement, witnout either party thinking of departing from the bargains made. One class of member of the Exchange – the d-aler – is very properly complimented in the report. This individual exists on no other Stock Exchange in the world, and to exterminate him/would inflicts very heavy blow upon the commerce of the nation, sincelt would practically stop all dealings in nine tenths of the shares and debentures which have been subscribed for to provide funds for carrying on industrial enterprise. For any security which has any acknowledged value it might be said, any of which he knows anything the dealer will fix two prices without knowing whether he is to be buyer or seller. He is bound to buy at the lowest and sell at the highest, and almost invariably quotes at so small a margin that the outside public have the utmost confidence in the justness of the shock Exchange, of combining the ealings—whether they call t

public.

In the Wheal Newton circular, noticed in the Journal of Aug. 3, it is stated that Mr. Lord apportioned one-fourth of the rental of about 5300l, per annum to Wheal Newton, the remainder being payable by Holmbush and Greenhill. This was inaccurately printed "one-half." We regret that the error should have occurred.

The Currus Investment and Improvement Company, with a capital

able by Holmbush and Greenhill. This was inaccurately printed "one-half." We regret that the error should have occurred.

The Cyprus Investment and Improvement Company, with a capital of 1,000,000/., in shares of 10% each, of which one-half is to be first issued, and it is an attractive feature of the enterprise that "no pre-liminary contracts have been entered into on behalf of the company." The assertions as to the insalubrity of the island have not been confirmed, and there is no doubt that with ordinary attention to diet and cleanliness (the latter a virtue not known to those under Turkish rule) the place will prove healthful and agreeable. It is mentioned in the prospectus that fruit grows wild in nearly every part of the island. The richness of the soil will, undoubtedly, tempt the English farmer, while the greatest facilities exist for thecultivation of the vine and of tobacco, which has for some years been a staple product of Cyprus. The delicate tobaccos coming estensibly from America or St. Petersburg are largely grown in Cyprus, and exported from thence to these places, through which they reach the English market. There can be little doubt but that the development of the island will be rapid. Railways must be constructed and buildings will be required, and material is found ready at hand. Timber is plentiful, and mining operations were carried on by the ancient Greeks, but have been long abandoned. They would, however, yield abundant return upon the capital invested in working them. Both the agricultural and the mineral wealth have lain dormant for ages, but capital will at once revivify the slumbering civilisation. The necessity for such as undertaking will, it is said, be generally seknowledged, and its success may be confidently predicted. Its objects are:—To effect sales and purchases, leases and transfers of land, and assist settlers by means of advances at interest: to improve by drainage, or by the introduction of modern machinery, estates and tenures: to assist in the construction of public a

The Mineral Corporation of Great Britain is reported to be making satisfactory progress with their Hafna property, and a detailed report upon the Hafna and adjoining mines has been made by the French engineer of the corporation. With regard to the substance of the report, it is stated that "the metalliferous system of Hafna consists of eight veins, running in different directions, and redistinguished as north and south veins, east and west veins, and redistinguished as north and south veins, east and west veins, and reins which run south-east and north-west. The north and south veins dip considerably, the angle being about 55°. Some of these latter veins, the Hafna loes among them, are of exceptional thickness, but all present the same character of undoubtedly metal bearing veins, the regular development of which as they are open on cannot fall to be appreciated by all competent engineers. The works at Hafna are already being pushed on with great energy; and, not only has it best decided to put in Dunn's rock-drills to replace manual labour in preparing for blasting, but Messrs. Dunn's engineers are already at the mines consulting with the local managers as to the readlest and most economic way of carrying with the local managers as to the readlest and most economic way of carrying with the local managers as to the readlest and most economic way of carrying with the local managers as to the readlest and most economic way of carrying with the local managers as to the readlest and most economic way of carrying with the local managers as to the readlest and most economic way of carrying with the local managers as to the readlest and most economic way of carrying with the poles and present the sum of the meantime, driving and clearing levels, and such like, has been going on,

and some good lumps of almost pure galena have been broken. It is estimated that within a month all the preparatory works will have been completed, and regular working commenced. The High Hafna, the second property of the corporation, towers majestically above Hafna, its base extending into two valleys wherein are the Pandora and the Conway mines respectively, so that while the higher portion of the sett must contain the Hafna lo les, the lower portion must contain the east and west lodes of Pandora, and still lower the lodes of the Conway Mine will dip into it. The Bryn Canadon deposits are parallel to the east and west lodes of Hafna, but it is not doubted that the north and south lodes of Hafna will pass through it." Competent authorities, it is said, consider that with energy and judgment the mines can be made highly profitable at a very small outlay; and, as the Mineral Corporation are determined to do their utmost to secure good and energetic management, it cannot be doubted that the result will be satisfactory, and that the whole district will be benefited.

St. John del Rev. 265 to 275; the telegram received on Monday

independ the mines on be made highly profitsble at a very small outlay; and, as the Mineral Corporation are determined to do their utmost to secure good and energatic management, it cannot be doubted that the result will be satisfactory, and that the whole district will be benefited.

St. John del Ray, 265 to 275; the telegram received on Monday states that the produce for July was 35,000 oits; the ley of the ore was 57 oits, per ton. The latest advices to hand refer to the month of June, and state that the stamping-mills through want of water have been worked at a lower rate of speed, the amount of mineral treated being less by 357 tons, equal to 203 toits. The mineral freed from killas, owing to a less proportion of pure mineral, shows also a difference of 14 oits, per ton; all of which has tended to unfavourably influence the month's return. The mineral through its several stages of treatment has given a higher yield of gold per ton; the value of the tallings reserved for turne treatment being 24 oits, per ton, which is a favourable extraction constraing the difficulties on the value of the tallings reserved for turne treatment being 24 oits, per ton, which is a favourable extraction constraing the difficulties on the value of the stallings reserved for turne treatment being 24 oits, per ton, which is a favourable extraction constraing the difficulties on the value of the stallings reserved for turne treatment being 24 oits, per ton, which is a favourable extraction constraint in the mine a weighting machine, for more accurate computation of the mineral weight. Do not electron of the stalling reserved for turne treatment being 24 of the stalling reserved for furne treatment being 25 of the stalling reserved for turne treatment being 45 of the stalling reserved for turne research and the cost, including general expenses, 2113.6 s. 9d.

The New Quebrada Company directors, in issuing the superintendent's—Mr. Holman's—report, call attention to a few points which of the lode in the deep level north towards Titles

The latest advices from the Nevada Mines indicate that there never was so much energy and enterprise as at present in the various mining districts surrounding the Comstock. The Sutro Tunnel and connections with the Comstock lode has awakened great expectamining districts surrounding the Comstock. The Sutro I tunber daronnections with the Comstock lode has awakened great expectations. Many of the gold and silver mines of California and Nevada "are being operated with great energy, and extraordinary stories of the richness of mines discovered, and to some extent worked, in Colorado, Arizona, the Black Hills, Idaho, and Montana, are widely circulated. Whatever there may be of truth or falsity in particular statements or rumours, it is evident that the pressure of hard times has induced a large number of capitalists to make resolute efforts to seek profitable employment for their capital amid the rugged wilds of frontier districts. While there will be hardships and privations to be endured, these numerous undertakings will doubtless lead to an increase of the actual cash value of a large portion of the Western States, and to the material enhancement of individual and national wealth."

The Rocky Mountains, writes a correspondent, "are proving to be a rich mining district. Explorers state that as a mining region it is unsurpassed. Rich ore is found from the grass roots, the country is well watered, and the whole range from base to summit heavily timbered. The valleys—particularly Lost River Valley—have along the bottoms lands that will ere long teem with grain. By close sorting ore can be extracted that will pay to ship to the Salt Lake market. The Rocky Mountain prospectors have discovered safe investment for capital. Salmon River silver belt is likely to occupy a prominent position among mining centres."

Hultafall, 3½ to 4½; a cross-cut has been put out through the lode in the Level and the service of the service of the control of the production of the control of the c

Hultafall, $3\frac{1}{2}$ to $4\frac{1}{2}$; a cross-cut has been put out through the lode in the 15, and about 5 fms. from the present end, where the lode is found to be 13 ft. wide, and worth 40 tons per fathom for the width of the lode for lead and blende. The general appearance of the mine is satisfactory, and a test sample of lead and blend will be

mine is satisfactory, and a test sample of lead and blend will be sold next week.

Lead Mines have been rather more active, and in some of the principal descriptions, such as Van, East Van, Great Laxey, Pateley Bridge, and West Pateley Bridge shares have changed hands at advancing prices. Van, 18 to 20; the 120 west is being driven by the side of the lode, and good progress is being made. The 105 end west is in fine lead. A cross-cut is being driven in the 90 west across the lode; at present it is in 3 ft., and has intersected a rib of steel ore. Other points without change, and everything going on in a satisfactory manner. Grogwinion, 2 to 3, cum div.; the monthly report states that the mine has not been looking quite so well lately, but prospects are now better. Wye Valley, 1½ to 2; a parcel of 30 tons of lead has been sampled, the prospects have continued to improve, and the mine is looking exceptionally well in the deep levels. West Wye Valley, 2 to 3; owing to the long grought water is still scarce, and no further samplings have been made, but a lot of ore is ready for crushing as soon as wet weather sets in. Caron, 2½ to 2½; the monthly report says the machinery is now nearly completed, and it is expected that in about a month's time active dressing operations will begin. A good deal of ore has accumulated upon the floors in readiness for crushing.

St. Harmon, 2½ to 3½; an important change is reported from this mine. In the 67 cast a cross-cut has been put into the north part of the lode, which has been cut into for 9 ft. wide, containing a good deal of lead, blende, and copper ore, and it is thought that something good will be opened out. A second cross-cut is now being driven in the same run of ground 15 fms. ahead, and much interest is felt in the result of this second point. It is believed that there is a long length of this north part of the lode standing in the level unexplored, and if it should prove in further development as rich as it is considered likely to be a very valuable mine will be quick sold next week.

COLLIERIES.-There is a little improvement in business on the colliery share market, the prevailing impression being that trade will at last improve, and that naturally with an extension of trade and manufactures the demand for fuel will increase and prices rise.

A most noteworthy point, and one which will have a material effect on prices as soon as home consumption increases is the continued growth in the exports of fuel. The past month shows a decided increase in exports over the corresponding month of last year and over the month of June, while last week shows an increase of 10,000 tons over the exports of the previous week—the figures being 312,793 and 372,879 tons respectively. The effect of all this has been to keep the market clear of stocks, so that any enhanced demand will come upon a market on which there are already very large requirements for exports, and thus prices must go up. This state of affairs is well illustrated by the condition of the Bouth Wales trade. Shipments there have growing at an extraordinary rate, and the local colliery owners look forward to batter trade than has been seen for some time past. The Powell Duffryn Company have reopened one of their collieries, and it is stated that others are to be restarted very shortly. Meanwhile, it is satisfactory to note that the recently authorised Pontypridd and Caerphilly line will give increased facilities of transport to the colliery owners of that neighbourhood, and that Newport, which seems detined to become a more important shipping port than it has hitherto been, has just opened a new graving-dock in connection with the fine Alexandra Dockstha evidence of the company in the fine Alexandra Dockstha evidence of the confidence that the condition of trade is such as to justify a belief that better times are in store for conlowners. The divident of 10 per cent. and a bonus of 2 per cent. resently declared by the Taff Vale Railway gives some idea of the extent of trade in South Wales. The Yules Railway gives some idea of the extent of trade in South Wales.

The great extent of the company's property, and the complete harders of its plant, together with the very small cost of getting its coal, all combine to put it in a position to compete favourably with any other collery in the neighbourhood; and wh

GORSEDD AND MERLLYN.—The recent discovery at the western level is likely to prove of great value; it is thought that the new lode runs intact behind the levels that have been driven during the past few months—so that a large extent of ore ground will be

The London General Omnibus Company have declared a dividend for the past half-year at the rate of 12½ per cent. per annum, leaving 15,000%, which they propose to add to the reserve fund.

With this week's Journal a SUPPLEMENTAL SHEET is given, which contains Original Correspondence: New Quebrada Corr pany (G. Ransom); the Richmond Mining Company (J. Elliott); Richmond Consolidated Mining Company; the British and American Iron Trades-One-Sided Free Trade; Investments r., Gambling (R. Tredinnick); the Barrow Rock-Drill and Engineering Company (Loam and Son); Antimony; Novel Feature in Mining Enterprise (G. J. Gray); the Mineral Corporation of Great Britain (W. Bennetts, H. E. Vickers); Pandora Mine (A. E. Cooke); On the Formation of Quartz (J. Mosheimer); the Five-Weeks Month (R. Bymons); Mines of Cardiganshire; Mining in Cornwall—"Setting" (S. H. F. Cox)—The Sootch Mining Share Market—The Wild Duck, or Sportsman's Arms—Improved Oscillating Pump—Mechanical Ore Concentration and Separation—No. 1 (illustrated)—Dynamo and Magneto-Electric Machine—Pleumatic System of Holsting in Mines—Aero-Steam Generators—the "Lechner" Mining Machine (illustrated)—Tatent Matters—Meetings of English and Australian, Melyndwyr, West Wheal Seton, and East Pool Companies, &c.

ZINC ORES.

ARMAND FALLIZE, INGENIEUR-CIVIL, A LIEGE (BELGIUM),

1.—CARBONATED AND OXYDED ZINC ORES (CALAMINE, &c.) 2.-ZINC AND LEAD ORES MIXED TOGETHER, BUT DRESS-ABLE KINDS ONLY

CAPPER PASS AND SON, BRISTOL PURCHASERS OF

LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, HARD LEAD, BRASS SLAGS AND ASHES, COPPER REGULUS, MATTE, SCORIA, TIN ASHES, TERNE ASHES, &c., and MIXED ORES or REFUSE, containing LEAD, COPPER, TIN, or ANTIMONY.

WALTER ROY AND ALLAN,

184, BUCHANAN STREET, GLASGOW,

184, BUCHANAN STREET, GLASGOW,
EXECUTE COMMISSIONS FOR THE PURCHASE AND SALE OF
SCOTCH PIG-IRON WARRANTS.
Sole Agents in Scotland for—
SPEAR AND JACKSON, Etna Steel Works, Sheffield; and
JOHN SHAW, Yorkshire Wire Rope Works, Sheffield.
Steel and Steel Tools, Pig and Manufactured Iron, Hemp and Wire Ropes
all purposes, Indiarubber Goods, and Farnishings of every description for
lieries, Founders, Engineers, Saw-millers, &c.

GEO. G. BLACKWELL, 5, CHAPEL STREET, LIVERPOOL, PURCHASER OF

MANGANESE, ARSENIC FLUOR-SPAR, WOLFRAM, BLENDE, CALA-MANGARBONATE and SULPHATE OF BARYTES, ANTIMUNY ORE, CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONP OCHRES AND UMBERS, CHINA CLAY, LEAD ORE FOR POTTERS, TALC, PHOSPHATE OF LIME, &c.

HENRY WIGGIN AND CO.

NICKEL AND COBALT REFINERS BIRMINGHAM.

WALLAROO COPPER.

MESSRS. JAMES AND SHAKSPEARE beg to give notice that their NEXT SALE will take place on Tuesday, the 20th inst., at Two P.M., at the Baltic Sale Room, Threadneedlestreet, when they will OFFER SEVEN HUNDRED AND SIXTY SIX TONS in CAKES.

Catalogues may be obtained at their offices, 10, Austinfriars, E.C., London, and Slater-court, Castle-street, Liverpool; also of Mr. D. DOCKER, 38, Cannon-street, Birmingham.

BURRA BURRA COPPER-P.C.C. BRAND.

M ESSRS. FRY, JAMES, AND CO. WILL SELL, BY AUCTION, on the 20th instant, at the Baltic Sale Rooms, ONE HUNDRED AND FIFTY TONS of CAKES and INGOTS.

Catalogues at 21, Gresham House, Old Broad-street, E.C.

WANTED, about 400 ft. of 12 in. and 400 ft. of 18 in. GOOD SECONDHAND PUMP TREES, of modern make; also about THIRTY SETS of STRAPPING or JOINTS PLATES, for spears, about 20 ft. long. Address, stating particulars and lowest price, on rail or boat, to JOHN BAYBOULD, Esq., Planet Colliery, Kingswinford, Dudley.

FOR SALE (the whole or part):—

100 Bettws y-Coed,
18s.
100 Court Grange, 17s. 6d.
20 Gorsedd & Mer., £4.
20 Parys Mountain, 8s. 6
20 Address, H. WILKINS, 3, Heybourne Villas, Tottenham.

P.S.—Buyer at all times of Tyn-y-Fron at a fair market price.

Notices to Correspondents.

*Much inconvenience having arisen in consequence of several of the Num during the past year being out of print, we recommend that the Journal sh be filed on receipt; it then forms an accumulating useful work of reference.

Economising Fuel at Mines.—In the Mining Journal of Aug. 3 a short article appears referring to the above subject, as effected by the use of Körting's under grate blowers and Perkin's fire bars. Would some correspondent kindly state the address of any firm in Manchester or Hull from which further particulars respecting these inventions can be obtained.—IRISH ANTHRACITE.

COLLIERY MACHINERY.—"B S. L." (Lombard street).—Particulars of Jones wedge can, no doubt, be obtained of Mr. Macdermott, of Scots Chambers, Pud ding lane. For pit-head gear details can be obtained of Mr. Ellis Lever, Wes Gorton Works, near Manchester.

LEAD IN SPELTER.—Would any metallurgical correspondent kindly inform us "What percentage of lead usually occurs (as an impurity) in ordinary comme cial spelter?"—H. W. and S.: Newcastle.

THE CAPE COPPER MINING COMPANY.—In the Journal of August 3, page 839, there is a list signed by J. G. Maclean, in which it is stated that the last dividend of the Cape Copper Company was at the rate of 25 per cent. per annum. This is not true; it was at the rate of 50 per cent. per annum.—L. Received,—"Regular Subscriber" (Utah): We will endeavour to do so—"Helvetia" (Parys Mountain)—"C. R." (Truro)—"Shareholder" (Trebeigh Consols)—"W. T." (Ballydehob)—"N. W"—"G. H. H." (Liskeard)—"Reader"—"Q.": The letter has been forwarded—"

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, AUGUST 17, 1878,

OUR EXPORTS.

From the returns just issued by the Board of Trade, showing the extent and value of our exports for the year so far, it appears that in some of our staple commodities, such as iron and steel, so far as weight is concerned, the last seven months contrast favourably with the same period of 1877, but so much cannot be said as to the amount at which they have been put down. Germany is still a very good at which they have been put down. Germany is still a very good customer to us for pig-iron, having last month taken from us no less than 23.524 tons, against 18.450 tons in July, 1877. Holland stands next, then Belgium and France, the total for the month being 87.053 tons, of the average value of 52s. per ton, against 81,954 tons in July last year at 56s, per ton. For the seven months of the present year the exports of pig were 505,833 tons, the price being equal to 53s. 4d. per ton. whilst from January to the end of July, 1877, the exports were 497,073 tons, and the value 58s. per ton. The decrease in the price shows how close our ironmasters have been working, and in all probability has been one of the main causes for our exports having been so favourable, especially to countries where large quantities of all probability has been one of the main causes for our exports having been so favourable, especially to countries where large quantities of pig are produced. In bers, bolts, rod, and angle iron there has been a considerable falling off, more particularly to India and British North America, whilst Australia has been a very fair customer. The exports, however, declined from 146,812 tons in the first seven months of last year to 129,451 tons up to the end of July last. Hardware and cutlery do not appear to have declined much, for the values for the respective periods of the last and present year were 1,866 652/, and 1,853,275/., so that the actual weight would be greater during the last seven months than for the corresponding period of last year. the last seven months than for the corresponding period of last year seeing that such goods have been much cheaper in 1878 than in 1877 seeing that such goods have been much cheaper in 1878 than in 1877. Australia has been the largest purchaser, having taken during the present year to the value of 354,3884, whilst the United States is credited with 175,6624., British India 147,6614., the Brazils 124,8934., and Germany 103,6064. Railroad iron shows to advantage as regards quantity, but not as to value. Just now more than ordinary interest seems to be attached to the production of railway material, and several firms that were formerly reputed for their iron rails have put down extensive plant for the production of Bessemer ones, for the production of t it is evident that both at home and abroad iron rails are fast dying out, and this is not to be wondered at seeing that there is such a trifling difference between the price of the two, whilst the lifetime of the one is at least three times longer than that of the other. of the one is at least three times longer than that of the other. Up to the close of July, 1877, the iron rails exported were of the value of 6l. 14s. per ton, and for 1878 6l. 4s., whilst Bessemer rails, that in 1877 were 8l. 8s. 3d. per ton, in 1878 had fallen to 7l. 13s. 3d. per ton. In all probability nothing in the history of the iron trade has shown greater fluctuation in price than rail way material, which is now lower than it has been during the last ten years. It may therefore, be of some interest to the trade and others to note the variations in the exports of railway iron and its value during the last ten years, which were as follow:

Tons. Value per ton.

....£7 19 1869 888,010 1,059,392 1871 1872 945,420 785,014 782 437 1874 1875 545 981 414,656 ******** 497,924 ********* 1878 (seven months). 283,966

led Rus-ia to take a much less quantity of steel rails from us than she would otherwise have done, whilst Germany, that only took 7983 tens from us during the first seven months of 1877, during the 7953 tens from us during the first seven months of 1877, during the present year has taken 26,218 tons, showing that we are still able to hold our own in the European markets, even in countries where Bessenter rails are largely produced. Less has been done with British India, but Australia during the present year has nearly doubled the quantity sent there for the corresponding months of last year. Germany has also been an excellent customer to us for steam-engines, having taken to the value, during 1878, of 139,370*l.*, whilst British India figures for 473,936*l.*, and Australia for 152,692*l*. whilst British India agures for 4/3,3304, and Australia for 102,022. The exiports of machinery may, therefore, be said to be highly satisfactory for the year, the value being declared at 1,477,404L, against 1,142,612L for the same months of last year. During last month there was a considerable increase in the exports of coal having advanced from 1,366,942 tons in June to 1,593,550 tons, and against 1,586,307 tons in July, 1877. As we have before pointed out, Germany appears to be taking less and less from us every month, owing to the greater attention being paid to the development of her own extensive resources, so that whilst in July, 1877, there was appears to the tensive years of the second of the country was her own extensive resources, so that whilst in July, 1877, there was exported to that country 229,605 tons, last month the quantity had fallen to 199,010 tons. France still is the largest customer, and this year, so far, has taken 1.804.103 tons, against 1,729,389 tons for the corresponding months of last year. Russia has taken an increased quantity, having for the year advanced from 705,598 tons in 1877 to 807.752 tons to the end of July. The large number of war vessels stationed in the Mediterranean has led to a much larger tonnage of stam coal having been forwarded to Malta than for several years that quantity to the close of July having been 274.737 tons. past, the quantity to the close of July having been 274.737 tons, whilst for the same months of last year it was but 197,638 tons. The total sent away during 1878 was 8,946,814 tons, in comparison with 8,931,190 tons for the corresponding months of 1877. But the price of the coal exported during the year has been such as to fully bear out the statement of our colliery owners that business has to be done without profit. The average value of the coal exported during the present year was only 9s. 5d. per ton, whilst last year it was 10s. 3d. per ton—a difference that would be now be looked upon as a very good profit indeed. Altogether, we think that our exports of iron,

steel, and coal for the year, so far as it has gone, may be considered satisfactory, and as indicating a change for the better in those important industries.

OUR COAL ABROAD.

The external demand for our coal has not exhibited any very great change during the last two years. In the seven months ending July 31 this year we made direct exports to the extent of 8,946,814 tons, while shipments were made for the use of steamers engaged in foreign trade to the extent of 2,235,220 tons. In one form or in foreign trade to the extent of 2,235,220 tons. In one form or another coal thus left our shores in the first seven months of 1878 to the tune of 11,182,034 tons. In the first seven months of 1877 the direct exports were 8,931,190 tons, while 2,046,439 tons were shipped for the use of steamers engaged in foreign trade, making an aggregate of 10,977,629 tons. In the first seven months of 1876 the direct exports were 9,053,454 tons, while 1,986,245 tons were shipped for the use of steamers engaged in foreign trade, or altogether 11,039,699 tons. Although the statistics for the three years do not exhibit any very great variation still the general course of

shipped for the use of steamers engaged in foreign trade, or altogether II,039,699 tons. Although the statistics for the three years do not exhibit any very great variation, still the general course of the exports and shipments of coal from the British shores is onwards. It could not well be otherwise, having regard to the gradual growth of British commerce and enterprise. Assuming that the exports and shipments proceed at the same rate for the remainder of 1878 they will amount for the year to 19,169,196 tons. The movement of coal from our shores is thus approaching a round 20,000,000 tons per annum, while most of us can without any very great mental effort recal the time when they scarcely reached 10,000,000 tons per annum. At the same rate of progress the external demand for our coal will have risen to 30,000,000 tons per annum by the close of this—at any rate from a materialistic point of view—wonderful century.

The French demand for our coal is still considerable. Amid all the surprising vicissitudes of French affairs the French have exhibited a decided penchant for English coal; and although coal mining has made substantial progress in France during the last 30 years—say, since the fall of Louis Phillippe in 1848—the consumption of English combustible was never larger in the French Republic than it is at present. In the first seven months of this year we sent France 1,204 103 tons of our coal, as compared with 1,729,389 tons in the corresponding period of 1876. The value of these totals was 777,8604.,776,3104., and 938,1284 respectively, so that the French are spending about 1,300,0004, per annum for English coal. The movement of our coal to Germany appears to be declining. At any rate this is the experience of the last two years, since while we sent the Germans 1,240,118 tons of coal in the first seven months of 1876. The only forwarded 1,120,023 tons to Germany in the first seven months of 1877, and 943,424 tons in the first seven months of 1876. The only forwarded 1,120,023 tons to Germany in the first seven months of 1877, and 943,424 tons in the first seven months of 1876. The development of coal mining in Westphalia and other parts of the German Empire appears to have rendered the Germans more self-reliant in the matter of their coal consumption; and certainly the Germans seem to have more steadiness of purpose and more methodical industry than the more brilliant and more volatile French, the result being that when the Germans resolve on securing a certain object they are more likely to attain it. Russia has taken more of our coal this year, the shipments in that direction to July 31 begins because 207.753 and the shipments in that direction to July 31 begins begins the same seem to be seen to be more of our coal this year, the surpments it that direction to any or having been 807.752 tons, as compared with 705,598 tons in the corresponding period of 1877, and 678,603 tons in the corresponding period of 1876. Probably Russia was preparing for a great war in the spring of 1878 as well as Great Britain, and purchases were made accordingly to meet the requirements of the Russian navy. The Russo-Turkish war of 1877 also, doubtless, disorganised, to some event the adding response of Russian comparers; and hence the extent, the ordinary course of Russian commerce; and hence the Russians were glad to lay in a portion of their coal supplies in this country. It may be remarked incidentally that although coal is now worked to rather a considerable extent in British India, our exports of coal to that portion of the empire attained an aggregate of 409,605 tons in the first seven months of 1878.

COLLIERY MANAGERS.

Accidents in mines from explosions of gas have certainly been of more frequent occurrence during the last 12 months than they were more frequent occurrence during the last 12 months than they were in several previous years, and this has led to Mr. MACDONALD, from his place in Parliament, having a tilt at colliery managers in general—a body not having a representative in the Legislature—so that it could be safely attacked with impunity. For several years the Member for Stafford was strongly opposed to the Government Inspectors, and -poke of them in anything but flattering terms; but from the summaries they have given in the yearly reports of what they have done in a year it must be admitted that their time has been fully and even laboriously occupied. This having been clearly shown, the Inspectors of Mines of late have not come in for such a large share of abuse as formerly from the agitators supported by the miners, so that they have been let down of late and colliery large share of abuse as formerly from the agitators supported by the miners, so that they have been let down of late and colliery managers hoisted in their places as persons that should be found guilty without trial of incompetency, ignorance, mismanagement, the cause of the deaths of those who have worked under them, and everything else the reverse of what they should be. This sweeping and wholesale condemnation of a class of men on whom the safe working of our mines depend we know is quite unwarranted, and ensures for those attacked the sympathies of all impartial persons who like fair play and evenhanded justice. That some managers may be incompetent and others negligent is by no means improbable, but those who have had the management of the collieries where explosions have recently taken place such cannot be said, for they

but those who have had the management of the collieries where explosions have recently taken place such cannot be said, for they are admitted to have been men of ability, great practical experience, and unremitting in the discharge of the duties devolving upen them. In his speech the other other day in calling attention to the evidence given in connection with the Haydock Explosion, Mr. MacDONALD boldly asserted that if the manager of a mine was not aware of an accumulation of gas it was a crime. This proposition, we feel sure, will not be endorsed by intelligent working miners. A manager is not expected to personally examine every part of a A manager is not expected to personally examine every part of a mine, there being persons specially appointed for the purpose, and whose duty it is to report where gas has been met with, and prevent persons going near to it. Then, occording to our ablest mining experts, we have sudden outburst of gas that it is impossible to anticipate or know where they will break out. This is the experience of our best known mining engineers, yet we are told that a manager who is unable to prevent such outbursts or occumulations of gas is guilty of a crime. Nothing, in our opinion, could be more preposterous than such a statement, and shows the animus of the person who can make it. It is certainly the duty of a manager to see the ventilation of the mine in his charge is as perfect as it is d in the e pensione to make it, and in the event of his neglecting to provide a plentiful supply of fresh air, and an explosion is the result, then by all means the person so offending should be brought to justice, and if proved guilty punishment should follow. But we hold to the good old principle that no person should be declared guilty unit proved so. That is the right and privilege conceded to Englishmen, and we do not see why colliery-managers should be treated in a contrary spirit. It is, therefore, scarcely fair for a Member of Parliament to bring charges against managers where the person who has the power of having them tried and their certificates cancelled also has a seat, as such is calculated to prejudice the persons so charged before they have had an opportunity of meeting any accu-sations that may be made against them in a court of justice. In the case of the Haydock explosion the Government sent down

eminent counsel to watch the proceedings and report on the evidence, so that there is no reason to doubt that if negligence is proved on the part of the manager the Home Secretary will cause him to be prosecuted. But under any circumstances he would be entitled to a fair trial without prejudice, and the opportunity given him of meeting the charges preferred against him. Such evidently is the feeling of the Home Secretary, for he stated in answer to Mr. Mc. Denald that where he was legally advised that a prosecution should be instituted he would not shrink from the responsibility, and would deal with the certificates of managers of mines the same as certificates of captains of vessels were dealt with by the Board of Trade. To this we can take no objection, nor can we see how managers of mines can. It is necessary for the safety of all persons ment.

engaged in coal mines that the managers should not only be com-petent but diligent in the discharge of their duties, more espacially the Act of Parliament fully carried out. Laxity in these respects may easily lead to an explosion, for which the manager would be held responsible. He could then be tried in the Court fixed by the Mines Regulation Act for the purpose, and if found guilty his certificate encelled, and to even a court of the court fixed by the Mines Regulation Act for the purpose, and it found guilty his certain ficate cancelled, and to such a course no reasonable person could object. But what we do object to is the assuming the guilt of a person before he has been tried and placed in a position of meeting any charges that may be brought against him. This was evidently person before he has been tried and piaced in a position of meeting any charges that may be brought against him. This was evidently the view taken by Mr. Cross on Tuesday night, when in answer to a question placed on the paper by Mr. MacDonalD as to whether he had seen the report of a trial of the manager of the Dinas Collieries for a breach of the Mines Regulation Act, said that legal proceedings were still rending and it would not be right to prejude ceedings were still pending, and it would not be right to prejudice the case either one way or the other by making any statement. This is the course we should like to see other members pursue, for colliery managers are as much entitled to justice and fair play as any other body of men.

THE SCOTCH IRON TRADE.

THE SCOTCH IRON TRADE.

The warrant market remains in the inanimate state which has prevailed for such a lengthened period, and the prospects at present are not in favour of any rally. On Friday last the price was 50s. cash, On Monday, on it being known that the Bank rate was raised to 5 per cent., business was done down to 49s. 7½d. cash. On Tuesday a few lots changed hands from 49s. 7½d. to 49s. 6d. cash, and 49s. 9½d. to 49s. 8½d. one month, while on Wednesday the market was steady, at 49s. 7d. to 49s. 6d. cash, and 49s. 8½d. to 49s. 7½d. one month being accepted; closing buyers 49s. 5d. cash and 49s. 7d. one month sellers asking 1d. per ton more. Seldom has the Scotch pig-iron trade been in a worse position than at present. Even in 1852, when warrants touched 35s. 6d. per ton, the outlook was brighter, and it is said the makers were as well off—or, rather, no worse off—than now. The exports all this year have been extremely unsatisfactory, and it would seem from the enquiries to hand that they cannot be any better during the autumn months. tter during the autumn months.

better during the autumn months.

Makers are finding so little demand for their iron that they have further reduced the prices of several brands 3d. per ton. No. 1 Gartsherrie is 57s.; No. 3 52s. 6d.; No. 1 Coltness, 60s.; No. 3, 54s.; No. 1 Quarter, 49s. 6d.; No. 3 48s. 6d.; No. 1 Eglinton, 50s.; No. 3, 49s. per ton. There are at present 96 furnaces in blast, against 103 last year; but the production will not be reduced in the same processing as a number of the furnaces have been greatly enlarged. portion, as a number of the furnaces have been greatly enlarged since then. Between 400 and 500 tons of pig-1ron are going daily into the store of Messrs. Connal and Co., and the stock there is now

into the store of Messrs. Connal and Co., and the stock there is now fully 190,000 tons, having not been so large since July, 1872.

The shipments of pig-iron from Scotland last week were—foreign, 3801 tons; coastwise, 2192 tons: total, 5993 tons, against 7321 tons in the similar period of last year. The total decrease in the shipments this year, as compared with last year, already amounts to 46,454 tons. The imports of Middlesborough pig-iron into Grangemouth last week 6652 tons, against 5682 tons in the corresponding period of last year. The total imports till Aug. 10, 1878, are 185,844 tons, against 178,374 tons till Aug, 11, 1877, showing an increase of 7470 tons in favour of this year. The manufactured iron trade is rather improving, and some makers have been able to obtain an advance of 2s. 6d. per ton. Engineers and founders complain strongly of want of work and unremunerative prices, but are now disposed to view the future with more hopefulness. The coal trade could not well be in a worse position, and there is no appearance of any immediate improvement taking place.

BARYTES.

One of those minerals that is becoming more extensively used year One of those minerals that is oecoming more extensively used year after year, but of which comparatively little is known except by those immediately connected with its production, is barytes. In its unmanufactured state it is found in various places, and whilst recently visiting one of the principal lead mines in Derbyshire we were shown a piece of what is termed calk that was brought up along with the ore, and was informed by the proprietor that barytes made from it. This was found to be correct on enquiring at a along with the ore, and was informed by the proprietor that barytes was made from it. This we found to be correct on enquiring at a barytes manufactory at Matlock Bath, the owner of which whilst treating us with every courtesy declined to allow us to see the modus operandi, which he evidently thought of sufficient importance to be kept a secret. The usual mode we believe is to grind up the calk by pug mills or stones running round in a trough. If necessary it is then blea hed, and afterwards made into a sort of paste, and so becomes paint. It is said that no small portion of it is mixed with white lead, a much dearer substance, and consequently when so utilised pays very well, selling, of course, at the same price as the superior material with which it is mixed. But by itself it is largely used for painting, and is, of course, free from the poisonous effects belonging to white lead. The poison of the latter is too n those who make and work it has long been notorious. Hence it is those who make and work it has long been notorious. Hence it is that a great increase has taken place of late years in the produc-tion of barytes, white or fixed white, an innocuous article as a substitute for poisonous white lead. In Germany barytes is made in large quantities, the principal seats of the manufacture being Cologne, Berlin, Schweinfurt, and Mannheim. From a sanitary Cologne, Berlin, Schweinfurt, and Mannheim. From a sanitary point of view the change of material is a most important one, and the Germans have to be congratulated for having also increased the production of it, as well as of the use of chrome green (Guignets green) instead of the Schweinfurt and other greens that are poisonous. In England large quantities of raw barytes are raised, and also in Ireland, the production last year having been 19,161 tons. On the Continent a great deal more is obtained, and in some parts of Sweden the material is found in the iron ores, in some instances the crystals exhibiting a greasy lustre, and in others a vitrous one. In connection with non-poisonous mineral paints it may be stated In connection with non-poisonous mineral paints it may be stated that at one of the manufactories in Derbyshire we saw brown hematite ore from Cumberland being ground up and made into strong and durable dark red paint. That these innocuous products are fast superseding the old and poisonous ones must be subject for congratulation, and it is satisfactory to find that the make of them is now rapidly increasing, and in Derbyshire where the barytes are manufactured there are now no less than nine or ten establishments in operation.

STOCK EXCHANGE COMMISSION .- In the report of the Royal Comquiry into the Stock Stock Exchange should apply for a charter of incorporation, and, failing this effort on their part, compulsion may ensue, for the report is, though moderate in tone, firm on points where the Stock Exchange is, though moderate in tone, firm on points where the Stock Exchange has hitherto fallen short in public estimation. In giving the institution the benefit of being a corporate body a favour rather than any statutory law is conferred. With dealings before allotment the recommendation is to make them prohibited by law under penalties sufficient to stop this mode of illicit dealing. The Commissioners think that the Stock Committee are not the proper authority, without official supervision to deal with the question of sattlements and out official supervision, to deal with the question of settlements and quotation, and recommend that some public functionary shall assist them. On the point of defaulting members and their re-admission them. On the point of defaulting members and their re-admission the present laws are held to be insufficient, and the Commissioners wish for further control. On "speculation" there has been apparently much evidence forthcoming, but all that is proposed is to exercise some additional check on those members where default is actually incurred. Members are to be admitted on the same terms as at present, but it is not unlikely that the term under which the securities are bound on the London Exchange will be extended. Summing up the whole report it may be practically said to resolve into a recommendation to the Stock Exchange to ask for a Royal Charter or incorporation by the Legislature. Credit is given to the Committee of the Stock Exchange for their efforts in the past, and Charter or incorporation by the Legislature. Credit is given to the Committee of the Stock Exchange for their efforts in the past, and the main reason for the recommendation for incorporation is that it will increase its efficiency and preserve the element of self-govern-ment. The evidence which has been taken is of a nature to make

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the bulky book well worth reading. Seeing the character of the evidence placed before it, scraps of which have leaked out from time to time, it is rather to be wondered that the Commission have not adopted bolder steps.

THE PETROLEUM INDUSTRY OF AUSTRIAN GREMANY.—An interesting and exhaustive treatise on the position and prospects of the petroleum industry commercially, historically, geologically, and technically considered, has just been issued through Mr. G. Knapp (of Leipzig), by Mr. Leo Strippelmann, M.E., who has so long given special attention to the subject on which he writes that his remarks are of more than ordinary value. The matter is at the present time attracting much attention in Germany, where it is considered that although the petroleum deposits of Galicia have hitherto received but little attention, they are destined to assume a prominent and important position amongst the national industries of Austra, and to afford an attractive field for the employment of capital. Not only has the published information concerning this industry been meagre, but what has been stated has often been dictated by prejudice and mistaken views, so that it has been far from representing the facts. Mr. Strippelmann has carefully investigated all the circumstances of the case, and put them together in a systematic manner, which could only have been accomplished with the aid of considerable practical experience. The mine law prevailing in the district, the rights and responsibilities of proprietors, and the influence of the petroleum industry on the population are fully referred to, and the petroleum zone of Western Galicia is specially described. With regard to the commercial aspect of the affair Mr. Strippelmann gives estimates for boring to a depth of 1000 ft. and 2000 ft., and states the probable risk of the enterprise and cost of obtaining the raw oil as well as the net profit which may be expected in the future, so that this portion of the book will be found useful in a busines point of view. That care and judgment are required to ensure success is admitted, but with these capitalists may, he considers, secure a fair return for any reasonable outlay for developing the West Galician oil deposits.

REPORT FROM CORNWALL.

REPORT FROM CORNWALL.

Aug. 15.—Doubts have been expressed whether, in spite of the evident improvement in the general condition of trade and the encouraging prospects which are held out to us from America (which exercise a far more potent influence over our business relations than is always taken into the account) there will not be a yet further reduction in the price of tin. We are bound to say we do not share this feeling, nor is it one that is generally entertained in the West. True, the production keeps up large, but the consumption is certainly increasing, and after a while we may anticipate that it will improve in a steadily advancing ratio. How the returns are maintained is shown by Mr. Provis's valuable report on behalf of the Mining Institute, which gives the quantity of black tin sold in July at 922 tons 6 cwts. 3 q.s. 7 1bs, from the undermentioned mines:—Wheal Agar, Basset, West Basset, Basset and Grylls, Blue Hills, Carn Brea, South Condurrow, Croity, Cook's Kitchen, Dolcoath, South Frances, West Frances, Godolphin, Grenville, Jane, Wheal Kitty, Livell, Wheal Owles, Penhalls, Penstruthal, East Pool, Tincroft, Uny, and Tin Streams.

Hills, Carn Brea, South Condurrow, Crofty Cook's Kitchen, Dolcoath, Suth Frances, West Frances, Godolphin, Grenville, Jane, Wheal Kitty, Lovell, Wheal Owles, Penhalls, Penstruthal, East Pool, Tincroft, Uny, and Tin Streams.

West Seton is certainly amply justifying the doubts we expressed as to the wisdom of the course adopted by Mr. Rule and his friends. We do not in the least question the intentions of Mr. Rule, but clearly he does not go a very wise way to work to carry them out. The dividend at the previous meeting, which was held to justify the appointment of the new management, turns out to have been a flash in the pan. It cannot be kept up, and so now Mr. Rule goes in for another change—the appointment of a new captain and tin dresser. A mine that changes a prominent member of its staff almost every account can never be in a fair way of doing. The discussion with regard to Mr. Rule's stream work on the leavings, to which Mr. Bennett originally directed attention was certainly very unsatisfactory. Mr. Rule says that more tin is going away from West Seton than from any other mine in the county; that he works the leavings as a check upon the mine, that he makes no profit out of them, but that he will not give up his work to the adventurers as a body, to whom, if to anybody, the returns of the mine certainly belong. We confess that to us such a series of statements appear self-contradictory. If he gets no profit why does he work, and if there is nothing to be got out of the leavings what is the mine losing? Whether, however, Mr. Rule is logical or not in this matter, we quite endorse the opinion expressed at the meeting that the arrangement is an objectionable one, and, as Mr. F. Harvey said, "open to suspit ion." No single shareholder ought to occupy such a relation towards any concern, and certainly least of all towards one in which he is the ruling spirit. West Seton is a good mine yet, and ought to be dealt with in a more business like manner.

There is something to be gained too from the discussion on t

service, though sanguine friends might have over estimated it. There is really no difference of opinion between him and Captain Maynard, who work harmoniously together, and 12 guineas a month is certainly by no means an extravagant salary. One of the most important points of the East Pool meeting, however, is to be found in a somewhat court of the most important points of the East Pool meeting, however, is to be found in a somewhat court of the East Pool meeting. Mayard, who work harmoniously agreed and the most is certainly by no means ne extravagant salary. One of the most is certainly by no means an extravagant salary. One of the most is certainly by no means an extravagant salary. One of the most is certainly by no means are extracted in a somewhat casual reference to the miners. At East Pool meeting, however, is to be found in a somewhat casual reference to the miners. At East Pool meeting, however, is to be found in a somewhat casual reference to the miners. At East Pool meeting, however, is to be found in a somewhat casual reference to the miners. At East Pool meeting, however, is to be found in a somewhat casual reference to the miners of the father than the manufacture of cement, concrete, and bricks and libe done with it? One of the means of turning it to good activing 3 fathoms, irrespective of cost, and for every foot in all be done with it? One of the means of turning it to good activing 3 fathoms, irrespective of cost, and for every foot in all be done with it? One of the means of turning it to good activing 3 fathoms, irrespective of cost, and for every foot in all be done with it? One of the means of turning it to good activities and the manufacture of cement, concrete, and bricks out of its manufacture of the creditors of Mr. Carmi Rollason, late manager and most of the fath the bricks are much cheaper than ordinary red bricks; and Mr. Charles Wood, the patentee of cement, concrete, and bricks out of its manufacture of every foot in all be done with it? One of the means of turning it to good activities of the fath of the means of turning it to good activities of the section of the manufacture of cement, on the patients of the fath of the means of turning it t

to be a debt, that is quite another matter, and to be settled in a different way.

Mr. Henry Williams, of Alma, near Truro, the highly respected copper ore sample taker, for a generation and longer with Messrs. Vivian and Sons, was buried on Saturday. Mr. Williams was well known in every mining parish, from the Land's End to the Tamar, as one of the most kindly disposed men, and as one of the partners in the firm of Tregoning, Sampson, and Co, tin smelters, at Bissoe, near Truro. He was the second son of the late Mr. John Williams, assayer of Truro, and leaves a large family and a number of sorrowing friends to lament his loss. In mining circles no man was more widely and more deservedly respected.

A rumour has gained some currency that Sir F. M. Williams, M.P., intended to retire from the representation of Truro at the next exciton. This is now officially denied. "We are now authorised to state that Sir Frederick Williams has informed his friends, who have been led to make enquiries on the matter, that he has not, and

NOTES FROM THE CLEVELAND DISTRICT.

Aug. 15.—I am glad to be able to report that the pig-iron trade of Cleveland continues to improve. Not only are prices advanced, but stocks are being reduced at a rapid rate. The efforts inaugurated by the members of the Ironmasters' Association at the beginning of the year to reduce the make of iron, and thus get rid of some of the heavy burden of stocks, is bearing fruit, and it may reasonably be anticipated that if the same care continues to be exercised the district will be once more placed on a fair basis for competition. During the month of July last the total make of the district amounted to 168,331 tons, produced by 94 furnaces, or an average yield per furnace of 1800 tons. To this average yield I will allude again. This make was 4812 tons in excess of the production during the month of June, yet stocks decreased to the extent of 18,714 tons in July. While writing I have before me the statement for the month of December, 1877. From it I see that the total make in that month was 175,995 tons, the production of 106 furnaces, or an average of 1660 tons per furnace. It is, therefore, apparent that the greatest economy is now employed, as with 12 furnaces less now blowing than in December last, only about 7000 tons—or the present production of four furnaces—decrease in make is shown. At the commencement of the present year stocks were increasing at an average of 15,000 tons. It is interesting to note the process of increased economy in working. Going back to August last year I find that the make for that month was 171,622 tons, with 106 furnaces blowing, or an average yield per furnace of 1620 tons. Ironmasters now are very careful as to when they shall stop for repairs, and the furnaces are kept fully charged. A larger proportion are now also put on hematite ore, the yield from which is greater than from Cleveland ore. It must not, however, be assumed that the difficulties of stock are yet over. There are still 298,210 tons of pig metal stored in the district, equivalent

Makers are not at all anxious to sell for forward delivery, while merchants are pressing for forward contracts. It is the belief of makers that prices will advance shortly. They are now about one poor sixpence higher than last month, but firm, with an upward tendency. Prices now quoted are—No. 1, 42s, 6d.; No. 3, 39s, 6d.; No. 4 forge, 38s, 6d.; Pre ton. Shipments during the month of July have been very good—a considerable increase in amount over June. Russia, since the opening of the Baltic ports, has become a good customer to Cleveland. A good deal of iron is also shipped to Germany, and the Scotch consumption continues to increase. Messrs Connal and Co., the warrant store keepers, are now receiving about 200 tons of iron per day.

I cannot give such a hopeful account of the finished iron trade. The improvement which was hoped for has not come in the proportion in which it was expected. The condition of finished iron manufacturers is improved as compared with the beginning of the year, but the amount of vitality infused into this branch of the iron trade has been comparatively small. Plate makers, however, are busily engaged on ship and boiler plates. Ship plates are in great demand, as luckily for the labour classes iron shipbuilding continues to prosper. The exports of manufactured iron and steel during the month of July amounted to 16,160 tons, or 3836 tons more than in July, 1877, and 1555 tons more than in June last. The foundries are well emploped. It is only recently that foundry work has been developed in Cleveland, and it now appears to have taken firm root. Two or three large firms have lately received orders of considerable magnitude for pipes and chairs, and more are hoped for and expected in this direction. Gradually the district is receiving an infusion of auxiliary trades, and all through the depression fresh shoots have been sent out until now the variety of trades is considerable. The manufacture of steel, too, is progressing most favourably. Even in the brightest times one could not expect t more vigorous kind of working than may be witnessed any day at Messrs Bolckow, Vaughan, and Co.'s Eston Works, where steel rails are being turned out, chiefly for continental use, as fast as the mills are being turned out, chiefly for continental use, as fast as the mills can deliver them. A new mill is also being erected, and when that is completed the output of rails will be 1530 tons her week. This firm are also proceeding with the demolition of old iron plant at Middlesborough to make way for steel works, intended for the manufacture of angles, tyres, chairs, &c. An experimental foundry which is being put up by a Falkirk firm at South Stockton is approaching completion. Seeing that Cleveland iron is now exported into Scotland for the manufacture of light castings, the firm in question are trying the experiment of manufacturing them on the spotinto Scotland for the manufacture of light castings, the firm in question are trying the experiment of manufacturing them on the spot and so saving freightage. Should the experiment prove satisfactory the manufacture of light castings—which as yet has no place in Cleveland—will be proceeded with on a somewhat extensive scale. I notice that Cleveland slag is being employed for building purposes in London in the form of bricks and cement. The utilisation of this apparently utterly worthless refuse of the blast-furnaces is an interesting feature in this district. Many of your readers may not know that Middlesborough, a town of over 50,000 inhabitants, is built to a considerable extent. Very much less than a century ago the bulk of the now working part of the town was submerged at high tides, and the Tees was a wide and shallow river, with hardly energy enough in it to reach the sea. Some hundreds of acres of marsh land have been reclaimed, filled up with slag, and are now built upon. The river has been confined within a moderate channel by training walls of slag, and a fine harbour is in course of construction at the estuary purely out of slag. Yet vast mounds of slag are accumulating, and it is a serious problem for the future what shall be done with it? One of the means of turning it to good account is the manufacture of cement, concrete, and bricks out of it. It is said that the bricks are much cheaper than ordinary red bricks; and Mr. Charles Word.

or, as in the present instance, will not acknowledge a claim made of the methods a golden that is quite another matter, and to be settled in a different way.

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A rumour has gained some currency that Sir F. M. Williams, M.P., mended to retire from the representation of Truro at the next feetion. This is now officially denied. "We are now authorised have been led to make enquiries on the matter, that he has not, and here been led to make enquiries on the matter, that he has not, and here been led to make enquiries on the matter, that he has not, and here here here are now authorised borough, and that it is his firm resolve to offer himself for re-election.

whenever the expected dissolution may take place. Sir Frederick's interest in, and intimate acquaintance with, mining matters would have made his retirement a serious loss to the mining community.

NOTES FROM THE CLEVELAND DISTRICT.

Aug. 15.—I am glad to be able to report that the pig-iron trade of Cleveland continues to improve. Not only are prices advanced, but stocks are being reduced at a rapid rate. The efforts inaugurated by the members of the Ironmasters' Association at the beginning by the members of the Ironmasters' Association at the beginning community.

tian gentleman. When the Franco-Prussian war was raging he was one of the distributors of the bounty of the Friends Aid Society through the provinces of France, and there are records of brave deeds performed by him which have caused his name to survive in the memories of hundreds of Frenchmen. He founded and mainly supported the Young Men's Christian Association at Stockton, which is a flourishing institution. At his funeral on Friday last many thousands of persons were present, and the utmost grief was expectation of the distributors of the bounty of the Franco-Prussian war was raging he was one of the distributors of the bounty of the Friends Aid Society through the provinces of France, and there are records of brave deeds performed by him which have caused his name to survive in the memories of hundreds of Frenchmen. He founded and mainly supported the Young Men's Christian Association As tockton, which is a flourishing institution. At his funeral on Friday last many thousands of persons were present, and the utmost grief was experienced by the members of the Franco-Prussian war was raging he was one of the distributors of the bounty of the Friends Aid Society here.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

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Aug. 15.—I was glad to see the letter of Mr. Pearson's concerning the slate trade in the Journal last week. There is no doubt that the amount of depression which has actually taken place in this trade has been exaggerated. A decided improvement has, however, taken place, large orders having been received in Carnarvon. The quarries of the Nantlle district, where men have been discharged, are small ones, comparatively speaking—they are the Penyrorsedd and Tanrallt. A few men have also been discharged from the Alexandra and the CeInddu. Mr. Darbishire, the owner of Penyrorsedd Quarry, is willing now to open his quarry for three days a week. The larger quarries have all along retained their full complement of men. A movement is on foot for making Major Mathew, the late proprietor of the Rhwybryfdu Slate Quarry, Festiniog, a suitable testimonial before his departure from the Principality to reside in England.

I have before me the report (in Welsh) of the recent Conference of the Quarrymen's Union at Penygroes, near Carnarvon. Among other papers there are two read by the Chairman, Mr. Parry—one giving a full abstract of Mr. Davies's book on Slate and Slate Quarrying, and one dealing with the Statistics of the Slate Trade in Wales. In the latter Mr. Parry refers to American competition, and notices the difficulty with which American slates are sold in England. By the following figures he shows the difference in the cost to be greatly in favour of home made slates as delivered in Livernool.

the following figures he shows the difference in the cost to be greatly in favour of home made slates as delivered in Liverpool:—

BANGOR SLATES.
Size, 24 by 12; number, 1260.
Price ... £13 0 0
Freight ... 1 10 0 | AMERICAN SLATES. | Size, 24 by 12; number, 1200, | Price £12 10 0 | Freight 3 15 0 | Lighterage... ... 0 9 0 Total £14 10 0 Less overcount ... 0 13 0 Net cost ... £16 14 0

Net cost... ... £13 7 0

Showing a difference of 3l. 7s. per 1000 in favour of Bangor slates.

On Monday, Aug. 6, the Westminster Colliery Company were fined 10l. and 8s 6d. costs, at Wrexham, for using a gunpowder store that was not qualified, and 5l. and costs for each of the four following offences:—1. For not keeping the store free from grit and otherwise clean.—2. For not providing suitable cleans without peoplets for

was not qualified, and 5% and costs for each of the four following offences:—1. For not keeping the store free from grit and otherwise clean.—2. For not providing suitable clothes without pockets for the workmen using the store—3. For not having the walls of the workshop connected with the store so lined that grit cuild not fall from off the walls, and—4. For not having the workshop where the cartridges are filled near enough to the store. The Treasury, represented by Mr. Bennion, Acton, prosecuted, and Mr. John Jones defended. The latter gentleman observed that life was too short for persons of only ordinary intelligence to understand the Explosives Acts, the obscurity of which was admitted by Mr. Bennion. There seems to have been an incipient riot by the youths employed at the Hafod-y-Bwch colliery. In consequence of a grievance, real or supposed, they marched through the district headed by a band, and gathered numbers as they proceeded. While heaitating whether they should pay their first attentions to the manager's house or the colliery, they were quieted by the intimation that the police had arrived, otherwise there might have been a rapetition of former riotous conduct. The distress among the colliers of this particular district is still very great. It is evidently a bad time for representatives, deputations, and conferences, for none of the professional friends of the colliers have put in an appearance lately. Wm. Pritchard, a shunter at the New British Iron Company, got crushed under the loading screens while trying to save his horses last week, and was taken badly hurt to the Ruabon Accident Hospital. Hopes are entertained of his recovery.

The manager from Tyn-y-Fron Lead Mine need not adout the

and was taken oadly intribute Russon Accident Hospital. Hopes are entertained of his recovery.

The manager from Tyn-y-Fron Lead Mine need not adopt the Scotch elder's prayer, "Lord give us a good conceit of ourselves," He certainly leads us to expect much from his 40 years' practical experience as contrasted with London theoretical management. One experience as contrasted with London theoretical management. One could wish the reports from Parys Mountain concerning the ground in the 90 fm. level were more decidedly good. I am hoping every week to see them assume this character; meanwhile it is pleasant to notice an improvement in those from Morfa Du. A good many of us are watching with keen interest the operations of the Mineral Corporation among the L'anrwst district mines. We wish for success for them and all other adventurers in that region.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Aug. 15.—There is no great falling off in the better demand which of late has been experienced by the pig and finished iron makers of this district. But the improvement is not marked. Pig makers are not willing to accept offhand offers that are made to them for long forward delivery. Some of them firmly refuse, expressing the belief that prices will rise before very long. Here and there some good contracts are on the books, but the case of the proprietor of the Spring Vale furnaces, who has sold the output of his four furnaces up to the end of the year, is exceptional: 4l. for hotblast and 5l. for cold-blast remains the official price of native all-mine pigs. Cinder qualities are still to be had at below 2l. Finished iron buyers are manifesting a little more freedom, but prices are no firmer; still sheets that a week or two ago could be had for below 8l. are now firm at that price. Round Oak iron remains at 9l. 2s. 6d. per ton. The tin-plate trade is, as regards the number of orders arriving, better. This week the Wolverhampton works of Messrs. E. P. and W. Baldwin, which have been closed for nearly 18 months, are re-starting. Prices of tin-plates show no strengthening.

any rise at a time when as now colliery-owners in the majority of cases are losing money.

We are informed that there is a temporary cessation only of boring at the Perry Colliery, and not as otherwise reported.

In North Staffordshire machine coal and slack is a little better called for, and this week it is being mined more rapidly, notwith-standing that stocks on the banks are sufficient to supply orders. Common qualities of ironstone are in poor request, but a more favourable report is possible as to best sorts. Pig iron is getting very slow of sale, and the prices realised are most unsatisfactory.

Respecting the New Homer Hill Call Mine, Mr. Cross has informed Mr. H. B. Sheridan that according to the last Inspector's report he received it was not considered safe to open the mine to make a search for the body of Thomas Shaw, who was killed there

in the performance of his duty. Mr. Cross had arranged for a fur-

ther report on the subject.

The inquest on the bodies of the 23 miners killed by the Apedale The inquest on the bodies of the 23 miners killed by the Apedale Colliery explosion in March last was opened on Tuesday. Mr. Maule, Q.C., watched the enquiry on behalf of the Home Office, and amongst the other officials present were Mr. Wynne, Government Inspector of Mines, Mr. Gilroy, assistant Inspector, Mr. Udall, one of the owners of the colliery, and Mr. Strick, general manager. The evidence of Wednesday was the most important. On that day the assistant Inspector deposed that he believed the exploision resulted from gas having been ignited by the firing of a shot. The opinion of the chief Inspector, however, and also of other scientific witnesses who were called, was that the disaster resulted from gas being carried along the return air-way to the furnace used for the purpose of ventilation, where it ignited. It was generally admitted that the pit was well ventilated, and carefully managed. A verlict was returned "That deceased lost their lives through an explosion of gas, but how or when caused there was no evidence to show."

At the Metropolitan Railway Carriage and Wagon Company annual meeting, held at Birmingham, the directors' report showed that there had been a profit on the past year's transactions of 17,729l. 17s. 8\frac{1}{2}d., and it was proposed to pay a dividend of 10 per cent. The report was adopted, and Mesers. C. L. Browning and H. Heaton were re-

The Patent Shaft and Axletree Company, Wednesbury, are among the successful manufacturers of the past 12 months, owing, no doubt, to the able managerial abilities of Mr. Richard Williams. The directors of this company report that during the past year they have made a net profit of 17,3214. 17s. 2d., out of which they have already pid an interim dividend of 5 per cent., and to enable them to provide for a similar payment to the shareholders they propose to draw from the reserve fund, which was accumulated largely from profits in more successful times than the present. The directors have very commendably foregone a portion of their fees.

In our report of the meeting of the creditors of Mr. B. Whitehouse last week we stated that the offer of 5s. in 1l. was declined. A proposition for its acceptance was not put to the meeting, as Mr. Hall, the debtor's solicitor, after saying that was the best offer he could make, to put the matter in the most business-like form, proposed that the estate should go into liquidation, and then it the creditors so pleased they should, in default of no better ofer being received, recommend the trustee under the liquidation to sell Mr. Whitehouse the estate for 5s. in 1l., payable at the time he had mentioned.— Wolverhampton Chronicle.

TRADE OF THE TYNE AND WEAR.

August 14.—The coal and coke trades show but little improvement. There has been a slightly increased demand for house coal, and the shipments of steam and gas coals are certainly large; but the fact remains that the output continues much too great for the the fact remains that the output continues much too great for the demand. Only a few collieries are employed fu'l time, or nearly so; in this number we find some of the best house and steam coal works. Some of the gas coal works in Durham are working full time, while a number of works are employed little more than half time. At Eldon Colliery, in South Durham, the strike continues, and the mechanics have now all been paid off with the exception of four men, and six hewers are employed underground getting coals for the supply of the furnaces. We learn from Browne's export list that the total foreign exports from the north-eastern ports in July last were 735,229 tons, against 645,120 tons in July, 1877, and sent coastwise 460,253 tons, against 471,777 tons in July, 1877, the total coals shipped being 1,195,482 tons, against 1,116,897 tons in July, 1877, being an increase of 78,585 tons; this result appears to be somewhat encouraging.

in July, 1877, being an increase of 70,000 tons; this result appears to be somewhat encouraging.

The iron market continues very firm, though no great extent of business is done. Buyers are holding back from giving the extra rates asked by makers, and where they can avoid purchasing will not do so. Sales have, however, been made at rather higher rates—No. 1 is 43s. to 43s. 64; No. 3, 39s. to 39s. 6d.; No. 4 forge, 38s. to 38s. 6d. About 39s. 3d. to 39s. 6d. represents the figure at which most of the business is done. This indicates a small advance. Improving accounts are received from many of the other iron districts of the country, and the continental trade also affords better promise, cancellally in France. There have been extra deliveries made for specially in France. There have been extra deliveries made for cotland exceeding 1000 tons last week those of the corresponding Scotland exceeding 1000 tons last week those of the corresponding week of the previous year, and shipments generally have been good. To Lancachire there has scarcely been so much iron sent, the demand having been quieter. Taking the pig-iron trade in its entirety there is a much better and more hopeful feeling prevailing. If the ironmasters can only dispose relatively of an equal quantity of iron this month to that delivered last the position of the trade will be still further improved. There are large exports being made to the leading continental countries, which are likely to increase rather than dimini-h as the season proceeds. The finished iron trade of the district shows no corresponding improvement with that of the pig-iron trade. There has been no extra demand worth mentioning. Plates keep firm at the late stronger rates of 6%. 5s. Bars and angle iron are quiet, and no change in prices appears. The general foundry trade is comparatively inactive, but special departments are doing a good business. are doing a good business.

An explosion has occurred at Scremerston Colliery, near Berwick-

An explosion has occurred at Scremerston Collery, near Derwick-on-Tweed, by which four men were injured, one of them, it is feared, fatally. The explosion took place in the main headway about 200 yards from the shaft. The men were got to bank immediately after the explosion, and out of the 19 who were in the pit four were injured as stated above.

At the North of England Institute of Colliery Engineers meeting, held on Saturday in Nawaatle, the president (Mr. Hare) in the

held on Saturday in Newcastle, the president (Mr. Hare) in the chair, a paper on "Boilers and Boiler Explosions" was read by Mr. W. O. Johnson, Seghill. Mr. Johnson said that during the whole of his 45 years career he had never seen a bad boiler explode, but on the other hand those of the best make and construction working at his 45 years career he had never seen a bad boiler explode, but on the other hand those of the best make and construction working at the same pressure, and connected with others in a range, had exploded. Having narrated the circumstances connected with the explosion of boilers under his charge, he went on to say that every care ought to be taken that boilers were frequently visited by those in charge. It was well enough to have boilers fitted with safety valves, water-gauges, steam-gauges, &c., but it was a great error to depend upon those safeguards doing their duty at all times. Having seen exploded boilers that were thoroughly repaired he decidedly objected to a boiler being extensively repaired, and rather than do so he would renew it. No doubt expansion and contraction had their doubtful share in explosions. He was of opinion that boilers should be made of one class of iron, and although it was a fine point he thought that iron from different makers did not expand and contract alike. He next proceeded to speak of the different kinds of boilers, and said that there were several things to be taken into account in adopting boilers—the duty they had to perform, the water that had to be used, and the chimney power that was at command, as to size and height, and the class or kind of coal that would be used. At Seghill they had adopted boilers 28 ft. long, 5 ft, 6 in. diameter, with a tube 3 ft. in diameter, built with the bridge rings. Having adopted a boiler at one of the farm establishments built with Adamson's tubes, fitted with Galloway's tubes, he was much wedded to it, as it was found that the boiler did the same duties with one-fourth the coal used by the ordinary cylindrical boilers, which was a much better result than could be obtained without Galloway's tubes. They had adopted at Seghill 12 of that class of boilers, and they had given every sati-faction; but from them no more steam was got than from the ordinary cylindrical boiler 6 ft, diameter and 30 ft. long. He was deceived in that, but still they with steam, thus proving that in adopting Galloway's tubes there was

a saving of coal.

There were various kinds self-acting mechanical stokers, and seven mechanical stokers patented by Mr. Butcher had been adopted at Seghill. They were adopted not so much to save labour as to enable duff coal to be used, and it was found that with these stokers, and using duff coal, steam was got a great deal better than with a rougher class of coal and hand firing. There was no doubt that the more regularly coals were put on to a fire the better it was, and if

they used large coal no benefit was got from the internal part of it, but simply from the outside. Duff coal was used at Seghill, and there was a reduction of something like 5 cwts. per day; and the boilers, seven in number, were now raising the same quantity of steam with a less quantity of coal, which was a great consideration. On the motion of Mr. Gibson (the secretary), seconded by Mr. Anderson, a vote of thanks was passed to Mr. Johnson for his paper and the discussion upon it was adjourned until the next meeting, At the North Lancashire and Cumberland Exchange on Monday the topic of the iron trade was not so chearful, which the difficulty

the tone of the iron trade was not so cheerful, owing to the difficulty of securing orders for prompt delivery. There is a good business doing in steel, and many large orders have, during the past few weeks, been placed on the makers' books; but they principally represent work for delivery over the present and during the ensuing present work for delivery over the present and during the ensuing year, and very little is doing for immediate consumption. A similar position exists in the iron trade. Stocks are fairly large, although one-third of the furnaces are stopped. Buyers are trading with caution, and though they are disposed to order well in advance, their present requirements are limited. Prices are steady, and no change in values is noted. Iron shipbuilders are indifferently employed, and finished iron sells in but limited parcels. Native iron ore is in fair request at previous values. Large quantities of Spanish and Irish ores are used, the latter realising 9s. 6d. per ton delivered, to 7s. 6d. for second qualities. Coal quiet, at 11s, for average steam qualities.

REPORT FROM THE FOREST OF DEAN.

Aug. 15.—The staple trades of the district are, as a whole, still in a sluggish condition. The collieries, with some few exceptions, are only partly occupied, trade being flat, and, as a consequence, employment limited. Light Moor Colliery has suffered less from the times than some others on the eastern side of the Forest, and in West Dean the New Fancy Pit has had most regular trade and employment. And the new works, or extension of works, at How Beach of Messrs. Barrett and Wintle are likely ere long to be well employed, the extensive plant now erecting being adapted to a large output of coal, and the article cut is reported of good quality. There is a rumour to the effect that Bilson and Crump Meadow recovery is likely ere long to see a rumour to the effect that Bilson and Crump Meadow recovery is likely explored to see a respective plant was a recovery to the second s There is a rumour to the effect that Bilson and Crump Meadow property is likely ere long to pass into other hands, but we are unable to confirm the report, though we consider there is ground for thinking it probable. The Tin-Plate Trade is not reported orisk, but the new works of Messrs. Chivers are advancing very rapidly, so that by next spring—if not as soon as the proprietor expects—a new source of employment will be opened for those willing to work. It is expected that from 200 to 300 hands will be required as soon as the manufactory is finished. This project of Mr. Chivers should teach the other coal proprietors a lesson—to attach manufactories to their pits to (partly at least) consume their own coal, and not depend so fully upon the demand for household consumption. They would thus obtain coal for manufacturing purposes at cost price. would thus obtain coal for manufacturing purposes at cost price, and to some extent at least prevent stagnation by securing returns from one if not from two sources, whereas now if the coal trade is down locally all or nearly so is down. We consider this proposition of having two strings to their bows weighty and important for the Forest coal proprietors. If the maxim were pretty generally adopted they would largely be their own customers, and reap the benefit of the arrangement, and they would also by taking the sug-

benefit of the arrangement, and they would also by taking the suggested course confers great benefit upon their workmen, as employment would under such circumstances be more regular.

Little improvement can be reported in the Iron Trade, but the Messrs. Crawshay are actively reducing their stock of pig-iron; and it is gratifying to observe a more hopeful state of mind as to trade prospects, there being pretty generally now a feeling that improvement is near at hand. This feeling is partly attributable to the fact that the political horizon is somewhat brighter since the Congress, and partly from the logical deduction of facts respecting the course of trade. It is argued, and justly we think, that, as supply as long been kept within narrow limits as to manufactured goods, stocks must by this time be greatly reduced, and that, as goods, stocks must by this time be greatly reduced, and that, as demand is likely to be increased in consequence of exhaustion of stocks, trade, as a logical sequence, must improve. It should be taken into account, too, that the relative state of the nations being now more peaceful men of capital will be more likely, from increased confidence, to invest their capital, and to adventure in new schemes. We are not so bouyant ourselves as to the immediate future, but, at the same time, we must express our belief that some improvement is near, and we would fain concur to hope that ere long substantial progress will be the order of the day.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Aug. 15 .- Again there is a rumour as to the re-starting of Cyfar-Aug. 15.—Again there is a rumour as to the re-starting of Cyfartha, but in this case it is said that only a small portion of the works will be reopened. Taken for what it is worth, the rumour must, at least, be received cum grano salis, for no official confirmation has been given. A meeting of the Dynevor, Duffryn, and Neath Abbey United Collieries Company debenture holders is called for Aug. 21, by order of the Court of Chancery. An explosion of fire-damp has occurred at the Dunraven Colliery, Rhondda Valley. Three men were severely burnt. A hole, it appears, had been bored for blasting purposes, and had been charged with powder, when the latter exploded, hence the disaster. The dividend of the South Wales and Bristol Wagon Company for the past half-year is at the rate of 10 per cent, per annum, with a bonus of 2 per cent. This is the usual discent. per annum, with a bonus of 2 per cent. This is the usual distribution.

The Iron Trade manifests most certainly a slight amount of improvement. This is true so far as regards most of the works; but at others, notably Tredegar, much slackness prevails. Prices, too, especially for railway iron, have not made any change, and must be utterly unremunerative. As for bars, there have of late been some fair orders lodged, but at low prices, and masters have been enfair orders lodged, but at low prices, and masters have been endeavouring to secure higher rates, but buyers have held back, declining to give higher quotations than already exist. Pig-iron is materially unchanged. Clearances have been very low, but it will be seen from figures given below that India has been a good customer of late. As regards the Steel Trade, there is a fair amount of artivity observable, the demand being chiefly for rails. The Tin-Plate Trade continues to show indications of an improvement, although prices are low. During the week two new mills have been started at the Duffryn Tin-Plate Works, near Swansea. The Neath Abbey Iron Company have supplied the engines, and the addition to the works will, of course, employ more hands. Mr. Daniel Edwards is manager of the entire works.

The Coal Trade remains as before. There are still large ship-

The Coal Trade remains as before. There are still large shipments, and the output of coal has increased to some extent; at the same time prices do not in the slightest degree alter, nor do they appear likely to. The demand for steam qualities is good, but freights are exceedingly low. House coals are dull, but for best descriptions of anthracite there is a fair demand. Patent fuel, descriptions of anthracite there is a fair demand. Patent fuel, though dull, shows a little more animation. During the month of July Cardiff cleared 6056 tons of iron, compared with 4702 tons in the corresponding month of last year; Newport, 12,354 tons, against 13,215 tons; and Swansea, 12 tons, against 98 tons. The following 13,215 tons; and Swansea, 12 tons, against 98 tons. The following were the principal clearances of iron made last month:—Bilbao. 1130 tons rail; Bombay, 2200 tons; Gothenburg, 1038 tons; Calcutta, 4162 tons; Cronstadt, 700 tons; Taragona, 521 tons; Wallaroo, 1929 tons; Galatz, 852 tons; Hamburg, 562 tons; Santo, 1075 tons; Vera Cruz, 1066 tons rails. Cardiff also shipped foreign during the same period 365,630 tons of coal, against 338,095 tons. Newport, 80,777 tons, against 57,244 tons; Swansea, 57,809 tons, against 63,289 tons; and Llanelly, 6448 tons, against 5094 tons. Coastwise clearances were—Cardiff, 78,470 tons, compared with 90,484 tons; Newport, 79,563 tons, compared with 80,284 tons; Swansea, 21,907 tons, compared with 20,634 tons; and Llanelly, 13,703 tons, compared with 14,635 tons. Last month also Cardiff cleared 19,713 tons of patent fuel, as against 12,064 tons in the same month of 1877; and of patent fuel, as against 12,064 tons in the same month of 1877; and Swansea, 12,485 tons, compared with 14,916 tons.

DUFFRYN TIN PLATE WORKS, MORRISTON.—The staple trades of this district, it is too well known, have for several years past been most severely depressed, taxing the patience and perseverance and Aug. 18—West Godolphin 16 1 2 18 ... £32 12 6 ...

lso the pockets of the proprietors, to no small degree, to keep the works upon the move and the large number of hands in employ, We are glad to observe several indications, small though they may be in themselves, which point to a return to more prosperous times, and we sincerely hope these indications will increase. Two more mills, in connection with the Duffryn Tin Plate Works, were started on Wednesday, and will, of course, give work for a still larger number of hands than usually employed. The first sod of these im-portant works was cut in March, 1873, and the first mill was started on Oct. 3 of the same year; the second mill started in the end of December; the third in March, 1877; and the fourth and fifth on Wednesday last. The engines were made and erected by Messre, Jones and Co., of Neath Abbey, and are very powerful condensing beam engines; drum of cylinder 37 and 40 inches respectively, stroke beam engines; drum of cylinder 37 and 40 inches respectively, stroke 5 feet, and are of sufficient power to drive the mills with ease. The machinery, also, is equally strong, and the last two mills are intended to work very large size plates, for which a better demand is daily springing up. As a whole, the works are well laid out, the annealing and seconring rooms being sufficiently large to carry on the work which the mills are able to turn out. The tinning department contains ten sets, and six additional ones are in course of erection, and six more are shortly to be added, making the tinning department when completed, twenty-two tinning sets, which would give as large an output as any in the kingdom. The starting of the two additional mills on Wednesday was the occasion of a good deal of local excitement and attracted a large number of gentlemen to the mills. The whole works are under the able management of Mr. D. Edwards, who has worked himself up from the ranks to his present position, and is deservedly esteemed by his employees and all D. Edwards, who has worked himself up from the ranks to his present position, and is deservedly esteemed by his employees and all associated with him. Amongst those present and who took part in the proceedings on Wednesday were Messrs, Daniel Edwards, Wm, Edwards, jun., Edward Gregory (of Swansea), Rowlands (London), Phillips (Beaufort), H. Jones, H. Howell, J. Jones, D. R. Jones and Alwyn (Neath Abbey), D. Glasbrook, sen., and D. Glasbrook, jun., Williams (Ynispenllwch), R. Jones (Britonferry), E. Jones (Blackwood), J. Jeremiah, J. Owen, J. Mayberry, Lloyd (Llanelly), T. Powell (Morriston), We can only hope that the starting of these two mills is an indication of that revival of better trade amongst our staple manufactures so earnestly desired. staple manufactures so earnestly desired.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Aug. 15.—Lead mining has undergone but little change of late, the production being kept up to about the average, whilst no new ventures have been made known. There is, however, every reason to believe were prices to improve that speculators might be found to try their fortune even in Derbyshire, for the ore is certainly very far from being exhausted. Some of the mines that have been very far from being exhausted. Some of the mines that have been abandoned owing to being overpowered with water, and not backed up with capital, might then be advantageously opened out, for the consumption is increasing, so much so that only last month our imports of pig and sheet lead were nearly double what they were in the corresponding month of last year, but the average price was less by at least 30s. per ton. At the ironstone mines the quantity of ore being raised is considerably less than it has been but our ironmasters evidently do not care to take more than a certain quantity of the local stone seging that they can be freely supplied from tity of the local stone, seeing that they can be freely supplied from Northamptonshire with an article perhaps rather better at a very moderate cost, so that some 16,000 or 17,000 tons now pass over the Midland Railway every week. During the past week or two some of the collieries in the Chesterfield and other districts have been working better, the men making more time, but this has not been working better, the men making more time, but this has not as yet led to any improvement in the price of coal, which is still very low and unremunerative. The London trade is much as it has been for several weeks past, the Midland having taken about an average tonnage from the principal collieries, Clay Cross as usual standing at the head. The pits at Eckington, however, have scarcely sent as much as usual, whilst rather more has gone from Langley Mill. Steam coal is still in but moderate request for the season, for now the consumption and exports are generally the largest during the year. Slack and smudge only meet with a quiet sale. The the year. Slack and smudge only meet with a quiet sale. The ironworks, all things considered, are doing a fair business, there

ironworks, all things considered, are doing a fair business, there having been recently a slight improvement in the demand for pig, whilst the foundries are working steadily.

There has been a considerable improvement in several of the most important branches of the Sheffield trades, more particularly as regards the heavier departments. In heavy armour-plates both the Atlas and the Cyclops Works have as much as they can do, whilst there is also a fair output of ship and boller-plates. The the Atlas and the Cyclops Works have as much as they can do, whilst there is also a fair output of ship and boiler-plates. The leading cutlery houses are not so busy as they have been, but there is every appearance that the American houses are likely to be busier for the "fail" trade. File makers are now better off than they have been for many months past. Bessemer rails are still in active request, but there has been no improvement in the price, for the competition is still very active. Few orders come to hand for iron rails, excepting for colliery purposes, whilst many of our colliery owners are now putting down Bessemer rails instead, as they have been found to be the cheapest. During the last week or two there has been a decided change with respect to the business doing in coal, and a larger tonnage has been sent to London of late than for several months past. In steam coal there has been more activity, and the exports from Grimsby have largely increased. It is expected that the deputation of the South Yorkshire colliery owners recently appointed to wait upon the directors of the Great Northem Railway will have an interview on or about the 26th inst. All that is asked is a reduction in the rate of about 1s. per ton, which would Railway will have an interview on or about the zoth use. is asked is a reduction in the rate of about 1s. per ton, which would lead to the present traffic being nearly doubled.

Mr. Alfred A. Broad, the official liquidator of the Braganza Gold ining Company, has, with the sauction of the Master of the Rolls, declared a cond and final dividend, which is payable to the creditors at the offices of Messracads, Paterson, and May, Walbrook, on Monday, the libth inst.

The creditors of the Ellwood Green Colliery and Brick Company

are to send in their claims by Sept. 16 next.

A petition has been presented to the High Court of Justice for the winding-up of the Lion Mutual Marine Insurance Association.

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IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867,

MATTER OF THE NORTHERN BOHEMIAN COLLIERIES COMPANY (LIMITED).

THE CREDITORS of the ABOVE-NAMED COMPANY are required, on or before the 19th day of September, 1878, to SEND their NAMES and ADDRESSES and the PARTICULARS of their DEBTS or OLAIMS, and the branes and addresses of their solicitors (if any) to JAMES FRASES, of No. 9. King's Arms-yard, Moorgate-street, in the City of London, the Official Liquidator, are aby their solicitors to COME IN writing from the said Official Liquidator, are by their solicitors to COME IN and PROVE their said DEBTS or CLAIMS at the Chambers of the Master of the Rolls, in the Rolls yard, Chancery lane, in the county of Middlesex, at such line as shall be specified in such notice, or in default thereof they will be EXCLUDED from the BENETIT of any DISTRIBUTION made before such debts are proved.

are proved.
Monday, the 28th day of October, 1878, at Twelve of the clock at noon, at the
said Chambers, is appointed for hearing and adjudicating upon the debts and
claims.
Dated this 2nd day of August, 1878.

THE CAMBRIAN MINING COMPANY

Notice is hereby given, that the SECOND ORDINARY GENERAL MEETING
of the Shareholders of this company will be HELD at the offices, on Esgair-Hir
Mine, near Talybont, Aberystwith, in the county of Cardigan, on TUESDAY,
the 30th day of Adgust, 1878, at Twelve o'clock noon, when the report of the
directors and the accounts will be submitted to the meeting for its adoption.

GEORGE H. KEENE, Managing Director.

48 and 49, Palmerston Buildings. London, E.C.

Dated the 8th day of August, 1878.

THE YORKE PENINSULA MINING COMPANY (LIMITED).

Notice is hereby given, that the ANNUAL GENERAL MEETING of the Shareholders of the Yorke Peninsula Mining Company (Limited) will be HELD at the City Terminus Hotel, Cannon-street, London, on TUESDAY, the 27th of August instant, at Two o'clock in the afternoon precisely, for the purpose of transacting the usual business.

The Share Transfer Books will be closed from Monday, the 19th instant, until Tuesday, the 27th instant, both days inclusive.

By order of the Oirectors,

50, Old Broad-street, London, 18th August, 1878.

50, Old Broad-street, London, 16th August, 1878.

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ROLLING STOCK and appurtenances thereto.

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STOCK, &c.

Particulars with allow and appurtenances thereto.

PARTICULARS, With plan, may be had of Messrs. NORTON, BOSE, NORTON, and BREWER, Solicitors, 24, Coleman-street, E.C., and 6, Victoria-street, Westminster; of Mr. SAMURL LOWELL PRICE, of 44, Gresham-street, London, E.C.; and Mr. FREDERICK WHINNEY, of No. 8, Old Jewry, London, E.C., the Joint Official Liquidators of the above company; and of Messrs. NORTON, TRIST, WATNEY, and Co., 62, Old Broad-street, London, E.C.

TO BE SOLD, BY PUBLIC AUCTION, under Decree of the Supreme Court of Newfoundland in Equity, in a suit between CHARLES FOX BENNETT, Plaintiff, and SMITH MCKAY and LEANDER GILL, Defendants, on Monday, the 2nd day of September next, at Twelve o'clock noon (if not previously disposed of by private sale), at the Court House, in St. John's, Newfoundland, that YALUABLE COPPER MINE and MINING PROPERTY called and known as the

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The mine is held under grant in fee from the Government of Newfoundland, containing two miles in length, by half a mile in breadth; a Licence of Occupation from the said Government, containing one mile square, west of and adjoining the Crown grant and land held under conveyance of fee-simple interests of feerest owners.

ing the Crown grant and land held under conveyance of fee-simple interests of former owners.

The title-deeds and documents, and plans and surveys of the property may be seen, and further information may be obtained, by application to Prescott Emerson, Esq., Q.C., Master-in-Chancery, at his office, in St. John's; or to either of the underigned solicitors for the parties, or to either of the parties.

Conditions of sale will be published hereafter.

PRESCOTT EMERSON, Q.C., Master-in-Chancery, St. John's, Newfoundland, January 23rd, 1878.

For further particulars, apply to C. T. Bennett, Esq., No. 55, Queen's-square, Bristol; Messrs. Henry Bath and Son, Gresham House, London; or to PINNENT AND GREENE, Solicitors to the Plaintiff; WINTER AND CARTER, Solicitors for Defendant McKay.

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PROSPECTUS.

It will be no matter for surprise that a company, formed for the purpose of developing the resources of our new accession, should be now established. On all sides has the greatest interest been manifested in the future of Cyprus, but it is chiefly the commercial section who are regarding with intense interest the new land which offers undoubted facilities for trade. These elements of prosperity may possibly be brought to fruition by individual exertion, but the concerted action of a private enterprise, such as the Cyprus Investment and Improvement Company, is calculated to accompilab far greater results than any isolated effort could effect.

Of the undoubted resources of the country little need be said. The public journals unite in glowing descriptions of this land of promise, the climate and soil of which are all that could be desired. The winter on the island is short and cold, but the summer long and hot—a heat tempered, however, by the moist breezes from the Mediterranean, which so refresh the ground that fruit grows wild in nearly every part of the island. The richness of the soil will undoubtedly tempt the English narmer, whilst the greatest facilities exist for the cultivation of the vine and of tobacco, which has for some years been a staple product of Cyprus.

The delicate tobaccos coming ostensibly from America or St. Petersburg are largely grown in Cyprus, and exported from thence to these places, through which they reach the English market. There can be little doubt but that the development of the island will be rapid. Railways must be constructed, and buildings will be required, and material is found ready to hand. Timber is plentiful, and mining operations were carried only the ancient Greeks, but have been long abandoned. They would, however, yield abundant return upon the capital invested in working them.

It is not contemplated that this last class of operations shall be at once carried

operations were carried on by the ancient Greeks, but have been long abandoned. They would, however, yield abundant return upon the capital invested in working them.

It is not contemplated that this last class of operations shall be at one carried out by the company, especially as the agricultural character of the land will in all probability be, to a great extent, first developed. On the island rice, beans, wheat, barley, olives, raisins, locust-beans, cotton, hemp, wool, slik, beeswar, honey, madder, beetroot, and, as we have said, grapes and tobacco, are extensively cultivated and exported. Both the agricultural and the mineral wealth have lain dormant for ages. Capital will at once revivify the slumbering civilisation.

The necessity of an undertaking such as is proposed in the Cyprus Investment and Improvement Company will be generally acknowledged, and its success may be confidently predicted. Its objects are—

1.—To effect sales and purchases, leases and transfers of land, and assist settlers by means of advances at interest.

2.—The improvement, by drainage or by the introduction of modern machinery, of estates and tenures.

3.—To assist in the construction of public and municipal works, such as gas and water supply, drainage, &c., of towns, and to promote and negociate the financial operations connected therewith.

4.—Generally to improve, assist, and develope the resources of this fertile island. No preliminary contracts have been entered into on behalf of the company.

The shares will be allotted in the order of priority of application, and in the event of no allotment being made the deposit will be returned immediately, without deduction, and should a less number of shares be allotted than applied for the balance of deposit will be applied towards the payment on allotment.

The Memorandum and Articles of Association can be inspected at the company's offices, where every information may be obtained.

Prospectuses and forms of application for shares can be obtained at the bankers, or from the secreta

FORM OF APPLICATION FOR SHARES. To the Directors of the Cyprus Investment and Improvement Company (Limited).

(Limited).

Gentlemen,—Having paid to your account with Messrs. Henry S. King and Co. the sum of £ , being a deposit of £1 per share, on shares in the above company, I request that you will allot me that number of shares; and I hereby undertake to accept the same or any less number that may be allotted to me, and to pay the calls or instalments thereon in terms of your prospectus, dated 31st July, 187s.

Name in full Address
Profession, occupation, or quality.

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at real value; offers his assistance for securing undeveloped mining property when held
to me prices. As to care taken in reporting, reference is made to the Mining Journal
Supplement, April 1, 1876, containing report on property of the Maxwell Land
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the trade—compare Missing Journal of Aug. 30 and Nov. 31, 1872, and New York
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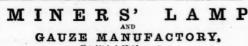
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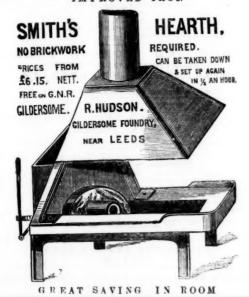
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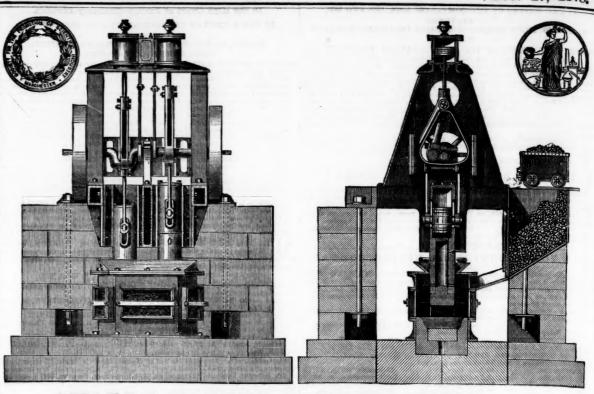
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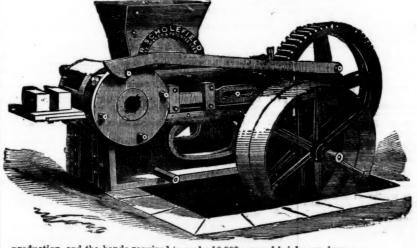
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908	NON-DIVIDEND MINES.	IRON AND COAL COMPANIES.
THE MINING SHARE LIST.	Nagres. Paid. Last wk. Clos. pt 40000 Aberdaunant, l., Llanidloes*	Shares. Company. Puid. Pries. 4100 Abbot, John, and Go. [L.]
BRITISH DIVIDEND MINES. Shares Mines. Paid. Last wk. Cios. pr. Total divs. Fersh. Last pd. 1500 Alderley Edge, c, Cheshire*	10000 Aberrystwith, '1-i, Carcigat	100 Ashbury Co. [L.]
4000 Brookwood, c, Bucktastellin	50000 Ballycummisk,* c, Schull	10 Bagnail, John, and Bons [L-]
2 0 0 2½ 2½ 2½ 0 2 0 0 2 0 July 1878 10000 Caron J, Cardigan* 2 0 0 2½ 2½ 2½ 0 2 0 0 2 0 10 1878 1000 Jaru Brea, c, t, illogant* 36 7 6 35 32½ 35 308 0 0 1 0 0 Feb. 1878 400 Cashwell J, Cumberland* 2 10 0 2½ 1½ 2½ 1 9 6 0 2 0 Aug. 1876 2450 Cook* Kitchen, t, illogant*; 24 14 9 ½ 1 11 17 0 0 7 6 Jan. 1873	3000 Bettway - Oced, * / (20,000 issued) 1 0 0 1 14 114 8000 Blacen Caelan, * 1, Cardigan 3 0 0 44 44, 44, 43, 43 8937 Blue Hills, t, c, St. Agnes 3 16 6 4, 44, 43, 43 80000 Boddoris, * t, b, D, Denbighshire 1 0 0 136 13, 13 13 1000 Bollihope Vale, * s-t, Durham 5 0 0 - 200 Botallack, t, c, St. Just] 123 15 0 - 200 Bowden Hill. * ms 1 0 0 - 3 1000 Bowden Hill. * ms 1 0 0 - 3 114 114 124 134 134 134 134 135 135 135 135 135 135 135 135 135 135	60 Biaenavon Iron and Steel Co. [L.] 50 0 0 100 Bolckow, Vaughan, and Co. [L.] 50 0 0 4 6 60 Bowling Iron Co. [L.] 50 0 0 0
10240 Devon Gt. Consols, c, Tavistock 1 1 0 0 2% 2% 2% 112 11 3 0 5 0June 1878 4296 Doloseth, c, t, Camborne	1000 Bollihopé Vale,* s-l, Durham 5 0 0 200 Botallack, t, c, 8t. Just; 123 15 0 2000 Bowden Hill.* ms 1 0 0 6000 Bradwell Moss Rake 1 0 0 1 74 1	50 Boilekow, Vanghan, and Oo. [L.]
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. but 0 Great Laxey, i, Isle of Man* 4 0 0 19% 18% 19% 23 19 0 0 0 19 1876	20000 Central Foxdale, , 1. of Man*(2l. sh.) 1 5 0 10000 Central Van, * l, bl, Llanidloes 5 0 0 5 120 Clementina, l, Llanrwat*	19 Cardigan Steel and Wire Co. [L.] 8 10 0 24 10 Central Swedish Iron and Steel [L.] . 10 0 0 1 2
10000 Grogwinion, I, Cardigan*	7500 Combellack,* t, Wendron	50 Chatterley Iron Co. [L.]
28-00 Leadhills, * i, Lanarkshire	5000 Ditto, 12½ per cent. pref	10 Consett Iron Co. [L.] 7 10 0 10½ 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
200 20 1 Tr 11 Timbinhown K 2 A 7/ 3/ 7/ 1 10 0 U 2 U Jan. 10 U	1°80 D'Ereaby Cons., l, ll, Carnarvon 10 0 0 11 10 11 512 D'Ereaby Mountain, l, ll, Llanrwst. 20 0 0 85 80 85 21000 Denbighshire Consolidated, l* 3 0 0 1½ 1 1½ 12000 Derwent, l, Durham	6 Davy Brothers [L.]
20000 Mining Co. of Ireland, e., e, 1 1 0 0 110 0 1 0 0 1177	6144 East Caradon, c, St. Cleer?	23 Ebbw Vale Co. [L.]
30000 Panty Mwyn, * 1. Mold (8794 iss.) 2 0 0 5 4½ 5 0 3 0 0 2 0 Aug 1874	8000 East Craven Moor*, I, Pateley Bdge 10 0 0 9 8 9 600 East Goginan, I, Cardigan 2 0 0 18000 East Van, I, Lianidices 8 0 0 4½ 5½ 5½ 1722 East Wh. Lovell, I, Heiston 9 1 0 ½ ½ 50000 Elgar,* s-I, Cardiganshire 1 0 0 3 ½ 3 5 5	16 Hopkins, Gilkes, and Co. [L.]
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10000 Red Rock, * f, Cardigan	12000 Glan Clwyd, * 1, Gwyddelwern 1 0 0 — 1 4000 Glenroy, * ɛ · 1, Isle of Man 4 5 0 34 54 34 10000 Glyn, * 1, Llanidloes 2 0 0 34 54 34 34 34 34 34 34 34 34 34 34 34 34 34	Midland Iron Co. [L.]
512 South Caradon, c, St. Cleer	12000 Goginan, & Level Newydd, Card., 1 2 10 0 — 10000 Gold, g, Merionethshire 1 0 0 — 20000 Goreu, * s-i, Carmarthen 1 0 0 1 34 1 20000 Gr. F. Foredad, 1 1 of March 1 1 0 0 1 34 1	1 Monatand Fron and Coal Co. [1.] 10 0 0 714 7 4 4 Mwyndy Ivon Ore [L.]
12000 Tankervine, t, Saiop	12000 Goginan, & Level Newydd, Card., 2 10 0 100000 Gold, g, Merionethshire	20 New Sharlston Collieries [L.] Pref 20 0 0 18 16 da 10 Newport Abercarn Coal Co. [L.] 10 0 0 2½ 2½ 10 Northmptn. Coal, Iron & Wagon [L.] 8 0 0 10 Northfield Iron Co. [L.]
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600 West Wheal Seton, c, Cambornet 47 0 0 10 8 10 448 0 0 0 15 0 Apr. 1878 12000 West WyeValley, *\(\), Montgou 3 0 0 2\(\) 2\(\) 3 0 12 0 0 3 0 Nov. 1877 1024 Wh. Eliza Consols t, St. Austell 18 0 0 10 0 Apr. 1878 2048 Wheal Jane, t, Kea 218 10 48 5 0 0 5 0 July 1875	6430 Harwood,* 1, Durham	50 Phonix Reserver Co. [6.]
80 Wheal Owles. St. Justs 181 5 0 35 30 35 50 20 10 4 00 Aug. 1872	Second Hush Eisteddfod Minera,* 1	50 Rhymney Iron Co. [L.]
0000 Wheal Prussia, t, Redruth 0 506 % xd 0 4 0 0 1 0 July 18:7	25000 Kingston Con., s-i, Stoke Climsland. 1 0 0 111/4 11/4 12000 Ladywell, sl. Salop	10 Ditto New
TOTAL DITTO TOTAL	2500 Levant, c, t, St. Just 9 18 6	60 Silkstone & Dodworth Cl. & Iron[L.] 33 0 0 24 23 di., 20 Skerne Ironworks [L.]
35500 Alamillos, i, Bpain 1,	2 100. 1 1 1 1 2 2 2 0 0 2 1 1 2 2 2 2 0 0 4 3 3 4 4 2 4 Mawston,* l, South Wales	80 Shkatone & Dodworks [L.]
18000 Biriseye Creek, g, California* 4 0 0 3/2 3/4 3/4 0 14 0 0 2 6June 1874 20000 Caps Copper Mining, † 80. Africa 1 0 0 32 201/2 801/2 31 7 6 0 17 6June 1878 34433 Cedar Creek, g, California* 6 0 0 3/2 3/4 3/4 0 5 0 0 2 6June 1878	6000 Mediyn Moor, t, Wendron 2 9 10. — 11000 Melyndw, t, Cardigan 3 0 6 1 14 14 14 17000 Mid Decon Copper 3 6 8 14 114	100 Thames Iron Company
15000 Chicago, s, Utah* 10 0 0 1 14 1 2 8 0 0 4 0 1876 65000 Colorado United, s-i, Colorado* 5 0 0 434 434 10 13 6 0 4 0 13 1876 10000 Colopapo, c, Chillis* (220 shares) 16 15 0 -	21000 Ditto 0 2 6 1 34 1 8000 Mineral Corp. of Great Britain* 10 0 0 0 11 10 11 11000 Monydd Gorddu, I, Cardigan*(Red.) 5 0 0 0 5 34 5 12000 Morfa Du, z, g, s, Anglesea 0 12 6 34 34 34 34	10 Vancouver Coal [L.] 6 0 0 1½ 1½ di.
28500 Eberhardt & Aurora, s, Nevada*† 10 00 64 4 4/2 1 8 0 0 3 0Dec. 1877 1 70000 Eberhardt & Australian et B. Aust. 2 10 0 114 144 2 15 9 0 1 0 Mar. 1977	25000 Nant-y-Ronen, s-i, Cardigan*	50 Welsh Ironworks Co. [L.]
	20000 New East Foxdale, s-l, Isle of Man. 0 15 0 141/4 13/2000 New Fowey Consols, t, St. Blazey*. 3 0 0 2 13/2 2	100 Wigan and Whiston Coal Co. [L.] 70 0 0 100 Wigan Coal and Iron Co. [L.] 78 0 0
58000 Kapunda Mining Co. Australiat. 1 30 0 2 4 0 0 6June 1873	1492 New Hendra, t, Breage 3 9 0 3200 New South Merllyn, t, Flint* 2 10 0 1 3/1 3500 New Tincroft,* t, Lelant 0 0 3 21/2 3 5000 New Wheat Brunns, c, Buckfastleigh 2 0 0 3 21/2 3 4000 North Cornwall,* l, Cornwall 5 0 0 53/4 53/4 53/4	WAGON COMPANIES.
20000 Last Chance, s,* Utah		10 Birmingham Wagon Co. [L.] 10 0 0 15½ 18xd
78 78 1 10 0 0 1 0Jan, 1878	29. 48. 2000 North Laxey, * Liste of Man	10 Met. Rail. Car. and Wagon Co. [L.] 5 0 0 3 3% pm xd
40000 Santa Baroara, 7, Brazil	6400 Cola Hills,* s-l, Limerick 5 0 0 12000 Pandora. * l, Carnarvon 2 0 0 6000 Park Valley,* s-l, North Devon 0 4 0 1 0000 Parracombe, s-l, Devon 0 5 0 5 0 5 6 000 Park S-l, Devon 0 5 0 6 000 Park S-l, Devon 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 6 0 0 5 0 7 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 5 0 8 0 0 <td< td=""><td>5 Ditto, pref., 6 per cent. 2 0 3/2 % pm 10 Midland 10 0 0 5½ 6 pm 20 North Central Wagon Co. 20 0 0 23 2 5 Rail. Car. [L.] (Oldbury) 5 0 0 4½ 5 5 0 0 4½ 5% 0 4½ 5% 6 0</td></td<>	5 Ditto, pref., 6 per cent. 2 0 3/2 % pm 10 Midland 10 0 0 5½ 6 pm 20 North Central Wagon Co. 20 0 0 23 2 5 Rail. Car. [L.] (Oldbury) 5 0 0 4½ 5 5 0 0 4½ 5% 0 4½ 5% 6 0
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15000 Western Andes, s, New Granada 5 0 0 0 12 0 0 12 0 0 12 0 July 1876	12000 Port Nigel # 4 Comments 2 0 0 69 48. 68.	TELEGRAPH COMPANIES.
NON-DIVIDEND FOREIGN MINES.	2000 Priceaux Wood, f. Llanivery	"5t." Anglo-American
5000 Anguilla Phosphate, West Indies (4000 issued)	5000 Silvercross,* c, t, Marazion	10 Eastern 10 0 0 7% 1% 10 Bast. Exten., Australia and China 10 0 0 7% 7% 1% 10 0 0 7% 8% 8%
soon Blue tent, age, Cantornia	50000 South Darren, t, Cardigan*	10 Great Northern 28 0 0 20 21 21 25 Indo-European 28 0 0 20 21 21 25 Indo-European 28 0 0 20 21 21 21 21 21 2
100000 Exchequer, g, s, California*† 6 0 0 2 Dec. 1871	6000 South Roskear, t, c, Camborne 7 5 0 4 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	10 West India and Fanana 20 0 0 4% 4% 20 Western and Brazilian 20 0 0 4% 4% \$1000 Western Union, 7 per cent. Mort. Bonds \$1000 114 115
40000 Holcombe Velley, g,* California	987 South Wheal Crofty, c, Illogan 40 0 10, 7 6 7 4500 South Wh. Frances, c, Illogan 7 12 4 4% 3% 4% 6000 St. Lawrence, Amal., ', Flintshire' 2 0 0,	MISCELLANEOUS, 8tk. Atlantic and Great Western Leased
12000 Hunter Consolidated, s-l, Utah 10 0 0 5 4 5 Fully pd		Lines, Rental Trust
12000 Lauestosa, * i, *, Viscaya, Spain (£2 shares) 10 0 0	6400 Tesgale," t, Durham 1 0 0 2 3 3 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 Avonside Engine L. J
4588 New Bensberg, i, l, Germany	12000 Trethellan, s-i, Crantock*	10 Brighton Aquarium [L.] 10 0 0 9 10
20000 New Zealand Kapanga, q, Coromandel* 5 0 0 2 1½ 2 Fully pd. 3000 Oregon, q, Oregon, U.S. (preference shares) 4 0 0 - 1 1½ Fully pd. 50000 Panulcillo, c, Chili*† (£80000 debeutures) 4 0 0 - 1 Fully pd. 50000 Pestarena United, q, Italy*†.	10000 Tyn-y-Fron, Landloes 20000 Van Consols, Llandloes 210 0. 54. 35 54	15 Foster, Porter, and Co. [L.]
25000 Pitanqui, g, Brazil (incl. 6000 sh. £1 fully paid) 0 5 0 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2	12000 West Assheton, !, Carnarvon 1 0 0 154 134 154	5 Kit Hill Tunnel [L.] 1 0 0
5000 Rica, g, Colombia* (40000 issued)	7000 Ditto	10 Hinteligen Colper and State 100 0 0 0 82 83 83 83 84k. Illinois Central, \$100 shares 100 0 0 0 75 80 84k. Illinois & St. Louis Bridge, lst Mort. 190 0 0 75 80 84k. Ditto, 2nd Mort., 7 per cent. 100 0 0 32 37
10000 Bliver Flume, s, Colorado"	12000 West Goginan, Cardiganshire	8tk. Illinois Cent. Sinking Fund, 5 p. cent. 100 0 0100 101 8tk. Ditto, 6 per cent. 100 0 0109 111 7½ Imperial Credit [L.] 7 10 7 1% 7 1% — Ditto, Surplus Certificate 7 10 7 1 10 1
43174 United Mexican, s, Mexico*11	1000 West Roskear, t. s-4, bl. c. Camborne, 8 10 0 - 25 20	25 National Discount [L.] 8 0 0 10% 17
20000 Teooma, s, Utah* 1 0 0 56 34 56 Fully pd.	3000 Ditto, 15 per cent pref	80 0 3 13 pm. 10 Pawson and Co. [L.]
BODDION AND MICONIA	one Wheat Company to be Agues 2 0 0	Btk. Ditto, 6 per cent. Preference 100 0 0122 124
Accepting 1888 & passent	5179 Wheal Grenville, c, Camborne* 3 16 6 2 2 214	20 Suez Canal shares 20 0 0 2036 31
Chil'an, 1866, 7 per cent	12000 Wheal Kussell, 6, Tavistock	13 Telegraph Construc. 2 Mainte. [L.]. 19 0 24 3 5 Ditto, Second Bonus Three per Cents 5 0 0 24 24 10 Tharsis Sulphur and Copper Co 10 0 0 23 24 24 11 11 11 11 11 11 11 11 11 11 11 11 11
Do., nor cent., V.M.L. 77 79 Do., per cent., V.M.L. 77 79 Bussian, 5½ per cent. L. Mort. 12½ 12½	b, blande; si, coal; c, copper; g, gold; i, lead; s, silver; si, slate; s-i, silver-lead; t, tin; s, zine. Limited Liability Companies: † quoted on the Stock Exchange;	London: Printed by Richard Middleton, and published by Herrer Escales (the proprietors), at their office, 26, Figst Street, E.C., where all communications are requested to addressed.—August 17, 1878.
United States Mort. 6 per centum 100 102	* Limited Liability Companies: † quoted on the Stock Exchange; I have paid dividends.	addressed.—August 17, 1878.